



Meet Paul McCartney!



Win a day out with Paul in our Broad St Competition



Sinclair rescued by Maxwell's £12m

Publishing magnate, Robert Maxwell, has taken over Sinclair Research after the company ran up debts of £15m.

The deal was announced last week after nine hours of talks between Maxwell and Sinclair which took place in Oxford at the headquarters of Maxwell's company, Pergamon.

Pergamon's subsidiary, Hollis, will acquire 75% of Sinclair Research shares and new shares will be issued to raise £12m.

The Sinclair crisis was brought about by a drop in sales last Christmas which left the company with £30m worth of stock unsold.

Mr Maxwell will take on the position of chairman in the company and Sir Clive will remain with the company as life president and research consultant. When the deal has been completed Sir Clive will be left with 8% of shares, a massive cut from his former 83%.

Mr Maxwell is planning to get rid of the huge surplus of stock by selling it in Eastern Europe. Plans for export of British made computers to the Eastern Bloc have been put forward before (HCW 98, Feb 9,



Software reviews p.10

1984), and on July 25 the government will relax export regulations so that nearly all home computers will be free from embargo.



Robert Mexwell

Sir Citve with working weferdrive

Mr Maxwell was born in Czechoslovakia and has retained close contacts with countries behind the Iron Curtain. A version of the 48K Spectrum, which was exhibited in Moscow in January at the Technical Facilities in Training Fair, has been developed to display the Cyrillic script and this could aid Mr Maxwell's plans tremendously.

It is still unclear whether the Sinclair name will remain on future products but the Maxwell deal ensures that Sir Clive will stay with the company for at least five years and continue work on the flat screen television microchips and computers at the newly created Metlab in Cambridgeshire.

When HCW went to press, meetings were being planned to decide what to do about Sinclair Research's principle creditors. Thorn EMI and Timex are owed £10m between them and Barclays and Citibank are owed £5m. Mr Maxwell has inherited these debts along with the company.

This is not Mr Maxwell's first venture into the field of high technology. Pergamon has produced electronic databases and was the company through which he purchased the Rediffusion cable television network for Elim last year.







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Alligata Software Ltd 1 Orange Street, Sheffield S1 4DW Tel: (0742) 755796



Soapbox

1 believe that computer education should be more widely taught among young children. Computers can be very expensive and not everybody is able to use one even though they may have a great deal of interest in the subject, therefore it would be a good idea for schools to put more emphasis on computer studies when educating young people.

I feel that the practical side of computing is more important than the theory. I have been taking computer studies for two years now and I can honestly say that I haven't learnt a lot. up to now, because I simply have not been given the chance.

The lessons which I took in computing at school dealt with theory rather than practice. When we used computers there were too many people and not enough micros for everyone. The people who did not own their own computers were at a distinct disadvantage because the teacher could not be bothered to help out and seemed more concerned with those who had experience of micros.

I think that this is very wrong considering the fact that computers are supposed to be so important nowadays.

There should be at least one computer club in each borough CONTENTS

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Jim Barker/Jon Wedge





To be Frank

Ocean's Frankie Goes to Hollywood is to include an unreleased version of the hit song Relax in the package.

The game is for the Spectrum and C64 and was launched on 20 June, It has been produced as a joint venture between the band, Island Records, Creative Producers ZTT and Ocean Software.

According to Ocean both versions contain over 124 screens and are priced at £9.95.

Ocean, 6 Central St, Manchester M2 5NS



The Frankies' manager. Tony Pope, gives the thumbs up to Oceans' new game

Big brother BT

British Telecom is clamping down on hackers in an attempt to stop people using the information contained in the Hacker's Handbook.

BT has instigated the use of a little used system called Service Interception. This means that many of the numbers in the Hacker's Handbook now connect you directly to an operator who will ask probing questions like "Who are you?" and "What do you think you're doing?"

If this happens then don't hang up because the operators have facilities to keep the line open so the call can be traced.

It will probably be best if you





leave well alone!

Dial-a-soft

C64 owners can now obtain BT East's Dialsoft program, a user to user communications program. There are two versions being written for the C64 and the first of these, for users with the OEL/PRISM comms pack, is now available. The new program offers facilities including auto-chat mode, data and program transfer facilities and a built-in machine code save routine.

The three versions now available for the BBC, Spectrum and C64 all use compatible line protocols and hence can be used in chat and transfer mode between all three machines.

To find out how to download these programs via your telephone call: Colchester (0206) 8068.

TV Quiz in HCW

There will be prizes worth £2000 in a new competition to be featured in the next series of Database on Thames Television. Home Computing Weekly readers will be amongst the first to have the clues.

 The competition is in four parts and has been compiled by Claire Walker of Micronet. Anyone wishing to enter has to collect four clues and by a little thought find the final answer.

There will be just three ways to collect the clues. You will be able to load them directly into your machine from the series using the special light pen that was developed for the 4 Computer Buff's programme. You can find the clues on the free Prestel areas — which costs nothing and can be dialed by and a modem — and on Micronet 800. Or you can read about them in Home Computing Weekly starting next week.

All clues have two parts which lead to the final answer. There are aspects of history, geography and even the classics in the clues, which take the form of cryptic messages. The editor is already struggling with a desk full of reference books.

The prizes are 30, one year subscriptions to Micronet 800 and the winners will be announced at the PCW show, selected ones will be invited to the Show, as Database presents a special live programme.

Each prize is worth £66 and there are a certain number set aside for HCW readers — so make sure of your chance by ordering HCW at your newsagent. NE

SW.

Pirates ahoy!

The Copywright (Computer Software) Amendment Bill passed through the committee stage at the House of Lords on 5 June with only two minor amendments. The Bill was supported by all parties.

The Bill will now return to the Commons for consideration of the Lords Amendments and it is likely that it will become law by the end of July.

Federation Against Software Theft, Chancery Hse, Chancery Lane, London WC2 1QU

Pirates beware

Cintronics has just announced the availability of a program, which, it is claimed, makes it impossible to copy a C64 program.

According to the manufacturers the program protects software from tape to tape copying, tape copiers and hackers cracking a program and then making a copy.

 Cintronics claims that experts and hackers have tested the program and so far no one has managed to make a copy of a program protected in this way.

Cintronics, Lonsto Hse, 1-3 Princess Lane, London N10 3LU

Pirates fined £1500

More software pirates have been brought to justice, this time in Wigan.

Lynkirk Ltd and its two directors were found guilty on charges connected with counterfeiting software produced by Stainless Software for the TI-99/4A.

Lynkirk Ltd was trading as Startrek Video when the tapes were purchased from Stainless. The charges were brought by the Trading Standards Officers of Manchester Council.

Lynkirk Ltd was fined £1500.

Oric crosses channel

In an exclusive interview for HCW, Jean Claude Talar, president of Eureka, gave details of his future plans for Oric in this country and abroad.

The good news for fans of the machine is that it will soon be available in the shops again, if distribution can be organised. Currently on sale in France is a package deal which offers an Atmos, a colour monitor and a cassette recorder at an all-in discount price.

The idea is to emulate the Amstrad package but at a much lower price — a difference of 1000 French francs was mentioned. If there are distributors who will handle the deal then there is no reason why this should not be in the shops within a month according to Jean Claude.

A worry for all the existing owners is that of continued support in both software and hardware. Eureka is making plans to provide this support too, although the firm is quick to point out that the purchase contract did not include any clause that required this of it.

Repairs will be undertaken by Eureka, in the UK at an address to be announced soon. "We are trying to set up after sales service and will not let anyone down. We have a very good reputation in this area in France and although the service will not be free we don't expect it to be expensive."

Walkies

Staff from US Gold have been raising money for charity by taking part in a 26 mile walk around Birmingham.

The "walkathon" was sponsored by Birmingham local radio and Cadbury Typhoo and there were 30,000 contestants. Home Computing Weekly were very pleased to have been invited to sponsor them and our donation has gone towards this total. The US Gold team raised £100 for charity.

US Gold has also taken an interest in greyhound racing by sponsoring the US Gold Software Stakes at a recent meeting at the Hall Green Stadium in Birmingham.

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The US Gold walkthon team after their exertions

The races were held to raise money for a hospice for terminally ill children.

BBC buddy

Bevan Technology has just announced the launch of the Good Companion for the BBC which, it is claimed, will bring the outside world to the user's fingertips.

The "bridge" structure of the Good Companions brings a new personal computer appeal to the BBC micro and adds a 3½ inch disc drive facility, according to Bevan Technology.

The Good Companion starts at £347 and is available from BBC dealers.

Bevan Technology, Gresham Chambers, 14 Lichfield St, Wolverhampton, W Midlands VWI 1DG



A new friend for the BBC

"One of our priorities is to contact all those companies who have produced either software or hardware for Oric in the past. We are interested in quality accessories and we want to get the maximum number of people possible working on Oric products, providing that the quality is assured."

"We will be continuing the development of the Stratos machine from the point at which Oric left off but this is not our major priority at the moment. We hope to launch at the end of the year but the engineering is not complete yet."

"We want Oric to live again in France. It will be the first independent computer company in the coutry and we intend to make it a success." Any readers who need to contact Eureka should write to:

Euroka, 39-41 Rue Victor Masso, 75009 Paris.

Robotix fun

N

Regular readers of HCW will recall our mention of Robotix from Milton Bradley, in HCW 99.

This new toy is a construction system which involves connecting hexagonal joints to motor units, thereby developing articulated robots. These can then be made to move and take action when connected to a battery unit.

They have now been officially launched and should be available in your local toyshop. What particularly interested us was the possibility of interfacing the robots to your micro.

We aren't the only ones to have the idea. The government sponsored Micro Electronics Educational Program has been using the system in schools and believes it has excellent control technology prospects.

Patrick Drewitt, a teacher at Coed Eva Junior School in Gwent, was very impressed with it and he said his children enjoyed it. He started the project by using simple circuits of wire and light bulbs. This led to work with switched robots and eventually to the machines being interfaced to their BBC computers.

He found that there is plenty of creative work possible. The children not only drew their robots but also wrote stories about them and even had them moving to music played by classmates.

Prices range from under £20 to around £70 it seems that this is one toy which will become a big hit next Christmas.

Milton Bradley, 23 Sheen Rd, Richmond-upon-Thames, Sur-



Robotix in the classroom



Robotix robotrix?

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ayon DISK DRI.

Hackers in court

Stephen Gold and Robert Schifreen, the alleged Prestel hackers, appeared in Bow Street Magistrates Court again on June 12.

They were arrested on March 27 by Detective Inspecter Austen accused under the Forgery and Counterfeiting Act 1981. They were remanded for another three weeks as additional charges under the act are being brought against them and because the defence had only just received the papers concerned.

There were about 300 papers according to one solicitor who therefore asked for time to consider the matter further and to decide how the case should be approached in the courts.

Despite the change in charges, they face a maximum penalty of a £1000 fine or six months in prison on each charge. In Mr Gold's case this could mean 2 yrs in prison and in Mr Schifteen's a fine of up to £5000.

The defendents were represented by Mr Spiro and Mr Bate who agreed with the prosecution for a date of July 4, to be set. Informed legal sources suggest that the case is likely to go on to the Crown Court after this date.

rey TW9 IAL

Dragon drives

There is now a disc drive available for the Dragon 32 and 64 computers. It has been produced by Cumana.

The Cumana Disc Controller is supplied with Cumana DOS, a Dragon compatible operating system in ROM. A 34 way ribbon cable connects between the disc drives and controller. Dragon 34 and 64 users can now take advantagef of the speed and convenience of discs.

The Cumana disc drives are available in a wide range of capacities, 40 to 80 track, in both single and dual versions.

Prices range from £179.95 to £354.95.

Cumana, Pines Trading Est, Broad St, Guildford, Surrey GU3 3BH Nigh quality 5% inch Japanese disk drives
Cabinet finished in hard wearing beige
Independent power support
12 months warranty

A disc drive for the Dragon

CUMANA

TV or not TV

P

Ardmore Adventure has recently extended its activity based holidays by joining forces with Crest Hotels for a series of Computer Weekends.

The courses are designed for computer users of any level, from absolute beginners to advanced users and are aimed

to encourage family participa-

TV personality John Craven tried the benefits of the first weekend held at the Crest Hotel in High Wycombe. Each course cost £85 for the accommodation and £30 for tuition, with discounts for children.

Ardmore Adventure, 01-439-

Advisor, John Craven, at Ardmore's computer weekend

CPC 6128 launched

Amstrad has entered the US market with the launch of a 128K machine which first appeared at the Consumer Electronics show in Chicago on 3 June.

Supplies of the CPC6128 will be available in the US in the autumn but it is unlikely that British buyers will be able to get their hands on one before the end of the year.

Software update

One of the most interesting new releases this week is US Gold's in fact it's a game based on C16 and Plus 4 computers. Trivial Pursuits, the general knowledge board game which has become an enormous best seller.

Amstrad chairman, Alan Sugar said: "We have no plans at the moment to sell the 6128 in the UK this year; indeed it will not be available in the US until the autumn. As our plans stand at the moment we are more likely to add it to our range early next year.

Amstrad, Brentwood Hse, 169 King's Rd, Brentwood, Essex CM14 4EF

Dennis back to back on one tape so you can get two games for the price of one and English Software has released yet Monster Trivia. It may sound another new title. This one is like a new spoof horror film but called Timeslip and is for the US Gold's best seller Beach Head is available for Amstrad owners at last and PSS has bought out a brand new title called Covenant for the

Gold standard

Amstrad Consumer Electronics has signed a deal with US Gold to produce a special range of high quality software which will be marketed under the name of Amsoft Gold.

The range will include half of the current US Gold titles including Beach Head, which is claimed by US Gold as the biggest ever seller for the C64.

Amsoft is planning to release 12 Gold titles over the next six. months.

US Gold's Geoff Brown said: "The Amstrad computer has quickly become one of the top selling pieces of hardware on the market and we are very pleased that Amstrad is producing our software for their machine. I am sure it will be a very happy and successful partnership."

All titles will come in cassette and disc versions priced £9.95 and £13.95 respectively.

A bag of winners

The winners of our Akhter competition came to the smokey city recently to be presented with their prizes.

Alan and Norma Boddington walked, or rather hobbled, away with a BBC Computer and a colour monitor. Michael Yates took away a colour monitor and Chris Hawthorne a green screen model.

They all had a full tour of the Argus offices and met the editors of a number of our sister publications, It was an opportunity for them to comment on the magazines and they used it very well. We do like to hear what our readers think and we welcome comments from everyone so drop us a line if you have three winners were Commodore an axe to grind.

full of electronics making its via Prestel. way out of Golden Square northern bound. involved designing a Micronet use mailbox 532860594. Please menu screen and we were don't use this for urgent fascinated with some of the messages though, letters are entries. They covered a wide more certain to be read on a range of subjects and visual regular basis.

ideas from fishing - how about a special section called Fishing Net? - to food.

Beach-head — soon

available on the

Amstrad

The winning entry was by Michael Pendry of Tredegar who managed to draw an excellent likeness of Humphrey Bogart using only the standard teletext characters. He wins a modem and a years subscription to Micronet 800 and Prestel.

Runners-up were I McAuliffe of Harpenden and Tejinterpol Singh Sohol from Coventry. The second prize of a modem and three months subscription was won with a menu involving Chatline, Swop Shop, What's New and the index screens by Mr McAuliffe. The modem goes to a fine representation of a C64 computer from the side.

It was a real surprise that all owners but they should soon be The day ended with a taxi chatting merrily to each other



Viper Software has released Fiona Rides Out and Dare Devil Spectrum.

	95 Tynesoft
Super Gran — C64/Spectrum £6. The Adventure	
Dropzone C64 £9.	95 US Gold
Phineas Frog C64 £7.	95 Mirrorsof
Ancient Quests Spectrum £7.: Fiona Rides Out/	95 Mirrorsof
Dare Devil Dennis C64 £7.	95 Viper
Dun Darach Spectrum £9.	95 Gargoyle
Timeslip C16/Plus 4 £6.	95 English Se
Covenant Spectrum £6.	95 PSS
Hustler C16 £6.	95 Bubble Bi
Cave Fighter C16 £6.	95 Bubble Bu
Nodes of Yesod Spectrum £9.	95 Computer
Beach Head Amstrad £9.	95 US Gold
Monster Trivia C64 £9.	95 US Gold
Sword of Destiny C16/Plus 4 £6.	95 Gremlin
Dork's Dilemma C16/Plus 4 £6.	95 Gremlin

5.95	Tynesoft
9.95	US Gold
7.95	Mirrorsoft
7.95	Mirrorsoft
7.95	Viper
9.95	Gargoyle Games
5.95	English Software
5.95	PSS
5.95	Bubble Bus
6.95	Bubble Bus
9.95	Computer Graphics
9.95	US Gold
9.95	US Gold
6.95	Gremlin
6.95	Gremlin

Incidentally if any of you wish to leave a message for the Another recent competition magazine using Prestel, you can





aving looked at a few simple machine code programs in the previous articles, it's now time to have a closer look at the registers available on the Z80.

The most important of the registers is the Accumulator, usually known as just 'A'. This is the workhorse of the Z80 and many operations will make use of this register. The accumulator is eight bits wide, and so it can hold integer values from 0 to 255. If bit 7 is used as a sign bit, negative values can then be represented. In this instance, values from -128 to +127 can then be represented.

The FLAG register is also 8 bits wide. Each of the eight bits can be either a zero or a one, and these can be set (1) or cleared (0) to signal the result of various operations. The flags are:

David Ellis continues his fascinating insight into machine code programming



bit 7	S	Sign Flag
bit 6	Z	Zero Flag
bit 5	-	Not used
bit 4	H	Half-carry Flag
bit 3	-	Not used
bit 2	P/V	Parity/Overflow Flag
bit I	N	Subtract Flag
bit O	С	Carry Flag

The next four registers are all 16 bits, and are used for addressing only. The IX and IY registers are used for "indexed addressing".

The Stack pointer register points to the top of the stack. The stack is an area of memory used for storing temporary results, which are put on to the stack with a PUSH instruction, and pulled off the stack with a POP instruction. Many clever

The only two flags at which we will be looking in this series will be the Carry and the Zero flag, which will be explained in due course. Some operations are available to work directly on the flag register and it is possible to have a look at the contents of this register if it is pushed on to the stack with the accumulator. Although the A and F registers are PUSHed and POPed on and off the stack as a pair, they are still "separate". The next six registers are the general purpose eight-bit registers, namely B C D E H and L. They can either be used as eight-bit registers, or combined to form the register pairs BC DE and HL. When combined they can be used as 16-bit "pointers" for memory addressing, or for holding

Figure 1. The Z80 registers Accumulator and flags registers A B C D E General purpose eight-bit registers Ħ Ł Index register IX IX Index register IY IY SP Stack pointer register PC Program counter register

tricks can be performed by manipulating the stack, although its misuse can cause the system to crash!

М

Δ

The Program counter register holds the address of the next machine code instruction to be used. Generally, this operation will be sequential (one after the other). Altering the value in the PC is the way in which jumps and loops are performed and this operation is taken care of automatically.

There are many instructions available on the Z80 for manipulating these registers. Listing one shows a small selection of some of these operations, together with the equivalent BASIC instructions. Think of the registers as being "variables" in BASIC although remember that they can only hold values from 0 to 255 if a single letter, and 0 to 65535 as a double letter. Also remember that although the variables, say DE and D, would be regarded as different in BASIC, in machine code they are not. If you are using the DE register pair to hold an address, then you can't use the D register to hold another value.

If you did alter the contents of the D register then the address pointed to by the DE register pair would be altered. If you did need to use the D register for a particular operation and the DE pair was holding an address, then you would have to PUSH the DE pair on to the stack, perform the operation, and then restore the value in the DE pair by POPping the value back off the stack. As a matter of fact, this sort of operation is used frequently. Note just how many BASIC instructions are needed compared to the machine code equivalents in some cases. The LDDR and LDIR stand out particularly here. However, many of these are exceptions. Generally speaking, it will take many more machine code instructions to perform the same operations as those in BASIC. The following articles will try to draw some comparisons between the two, as, hopefully, from studying listing one, you will see that many BASIC and machine code operations appear to be quite similar.

Listing 1. Comparison of Z80 instructions and BASIC

BASIC Machine code GOSUB CALL IF A - PEEK(HL) = 0 THEN ??? CP (HL) A - B = 0 THEN ??? CP B IF. IF A - value = 0 THEN ??? CP value POKE HL , PEEK(HL) - 1 DEC (HL) LET A = A - 1 DEC A LET HL = 1L = 1 DEC HL B = B - 1 : IF B <> 0 THEN GOTO (offset?) DJNZ offset TEMP=DE : LET DE = HL : LET HL = TEMP EX DE,HL LET A = A + 1INC A POKE HL , PEEK(HL) + 1 INC (HL) GOTO address JP address POKE address , A LD (address),A POKE HL , D LD (HL),D LET A = PEEK(address) LD A, (address) LD A, value LET A = value LD C,D LET C = DPOKE DE, PEEK(HL) : BC = BC - 1 LDD DE = DE - 1 : HL = HL - 1POKE DE, PEEK(HL) : BC = BC LDI DE = DE + 1 : HL = HL + 1WHILE BC <> 0 POKE DE, PEEK(HL) : DE = DE - 1 HL = HL - 1 : BC = BC - 1WEND WHILE BC <> 0 POKE DE, PEEK(HL) : DE = DE + 1 HL = HL + 1 : BC = BC - 1WEND LET A = A OR PEEK(HL) LET A = A OR D RETURN IF CARRY = 1 THEN RETURN IF CARRY = 0 THEN RETURN LET A = A - PEEK(HL)LET A = A - value LET A = A - L

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LDDR

LDIR

OR (HL) OR D RET RET C RET NC SUB (HL) SUB value SUB L

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Commercial television comes to computer screens. While this little gem of a program is loading you not only get the expected litle screen but also a tasteful ad for KP Skips. If this helps to keep Mastertronic games at £1.99 then 1 won't complain (carefully avoids puns about nibbles and bytes and get on with the review! Ed.).

The idea is to play the role of Clumsy Colin as he tears about the town on his motorcycle picking up spare parts. Some of the spares are really useful items adding extra speed and power to the bike and if you fund all the parts you can enter the drag race at the end of the game.

The graphics scroll through a full 360 degrees as you steer Colin around the various parts of the town. There's a building site, a fairground, several lakes, a garage and a race track all superbly represented in high lateral perspective 3D.

Only one 'find' is shown on the map at a time. As more and more objects are collected they become harder to reach by being placed on the scaffolding of the building site or the roller coaster. Because the bike can be facing in any direction on the screen, selecting left or right turns can be difficult. I was surprised to find how quickly these orientation problems can be overcome and soon found myself zooming around like an urban Barry Sheene. Even if this was not a bargain price game I would recommend buying it, at this price I demand that you do! E.D.



Π

Glass

Once more 1 find myself marvelling at the graphics on a game, only to fall asleep once I've actually played it.

There's no doubt about it. Glass is graphically excellent, but though it has elements of the Star Wars arcade game (the plain with various towers, through which you must fly), and Buggy Blast (the defence droids which you must knock out), I found that the game itself was not very challenging or addictive. You can get through most screens simply by keeping your finger on the fire button and firing randomly all over the place. Of course, as you get on to the higher levels (there are 14 in all) the action does get faster and more demanding, but as each level differs from the previous one only in speed, and not in content, I found that I just couldn't be bothered with going through the repetition of the same screens over and over again.

Some of the graphics are as good as anything I've seen on

Planet Attack

It doesn't take a dose of second sight to suss that this is a version of that well thrashed favourite, Skramble. I won't bore you with full details of the overall idea other than to say that it required you to fly through a number of caverns, shooting or avoiding various adversaries. In order to replenish your decreasing fuel levels, you must bomb fuel dumps. Get to the end of the caverns and you start again but at a more difficult level.

That all sounds pretty dull, so what does this version offer? Well, the answer is quite a lot. First, the graphics are quite interesting with scrolling character patterns and other effects. After the first zone things become a little unusual. Most of your time passed snaking down a complex passage, the latter stages of which reflect a severe dose of Jeff Minter, with flying birds and toilets with flapping lids. Additionally, you must negotiate a pin table with quite tight passages. The last zone has force fields to avoid. One slight peculiarity is that unlike other Skramble clones, fuel dumps are not completely destroyed when you hit them. With care you can hit each dump twice getting double fuel. The scrolling is smooth and the game has quite a professional feel to it. The game play is good and very enjoyable. Notwithstanding the innovations though, there isn't enough in it to justify buying this game if you already have a copy of Skramble. If you don't, at the price, it's a snip. A.W.



Price: £1.99

C64

Publisher: Mastertronic

Address: Park Lorne, 111 Park Rd, London NW8 7JL

the Spectrum, and the speed at which the towers on the plain come at you, without any flickering of the graphics, is very impressive. So too are the pictures of cities and spaceships in some of the later screens, but, as the instructions are sparse to the point of being negligible, I didn't really understand the point of these scenes. Clearer instructions would definitely help, though 1 doubt if they would make the game any more exciting. C.J.

Price: £7.99

Publisher: Quicksilva

SPECTRUM

Address: Liberty Hse, 222 Regent St, London W1 Price: £1.99

C64

Publisher: Scorpio Gamesworld

Address: 307 Corn Exchange Buildings, Cathedral St, Manchester

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Mr Frosty and the Killer Penguins

Well, folks, it's cutte time. You control Mr Frostie - a snowman — and must help him collect snow balls so that he can build a snowman called Shivery Sam. Your activities are impeded by nastry killer penguins and other hazards. The game is really a routine platform game in which you must move up ladders across moving platforms and other areas, in order to collect snowballs. Once a screen is completed, you enter an intermediate screen showing how far you've progressed on the snowman

Graphically, the game is rather average with ordinary character designs and lots of white with a few blue bits. Animation is very poor. The first action I took when playing the game was to turn down the TV volume. The sound effects are extremely irritating.

The bad news is that the game play is extremely poor. Everything moves at the speed of light and it's almost impossible to



Ciphold

From the name of the publisher of this game, I assume that this is part of an antidote to US Gold. But, if that's the case, then I doubt that our US friends will be too concerned.

Superficially, this game holds much promise with its claims for hi-resolution 3D graphics. in reality, this means a well drawn, multicolour bit map backdrop which gives a pretty good 3D view of a planet surface. As the game starts this view scrolls to give the impression of the sun traversing the sky. Unfortunately, the scrolling is rather lumpy and unconvincing

The idea is to repulse a wave of attacking space ships. This is achieved by lining up a set of cross hairs and zapping. The space ships also shoot at you, their shots appearing as spheres which grow bigger as they approach. Once you have cleared the space ships, you must destroy a mothership with 10 well placed shots before it breaches your defences. Fail, and Earth is destroyed.



A Parent's Guide To **Educational Software**

This is one of the Daily Telegraph's educational publications and is a compilation of chapters by various authors under the editorship of Dr Bill Tagg. Dr Tagg is the Director of the Advisory Unit for Computer Based Education at Hatfield, and many of the contributors belong to the government backed Micro-Electronics Programme or are in University computer based learning departments.

The book is extremely easy reading — despite its highly academic authorship - and can be read in its entirety or dipped into for specific chapters. The chapters cover a wide range of subjects, from the role of the computer in education, through points to consider before buying a computer, information handling programs, Logo and what to look for when buying software. There is one chapter devoted to the 75 programs the Advisory Unit believes to be the best available.

As I mentioned this is a very readable book but it does have its faults. Its title gives the impression that it will help



control the snowman. Couple this with the very tight tolerances for collisions, and you have an almost impossible game. Only once did I complete the first screen and then I got stuck on the middle bit. The instructions are minimal and I felt that the portion suggesting that you detune the TV to get a snow effect pretty well summed up the quality of the game. Even at the budget price, this game offers little and I really cannot recommend it. A.W.	effect is laudable, with well drawn shace ships which swoop as they attack. The explosion effects are fair and look quite impressive, albeit a little static. The main problem is that the game is boring with little to do other than destroy alien ships. True, the action is quite demanding, but a little more variety would have helped. I don't think I'll be playing this game too often, I'm afraid. A.W.	to them in the home, yet most of the chapters give more information about how the computer is being utilised as a very exciting tool in our schools. Further, most of the software described is for just those machines most extensively used in schools — the wide range of home computers avail- able is virtually ignored. Over- all, a book to be borrowed from the library before deciding whether or not to buy it. M.W.	
Price: £1.99	Price: £9 95	Price: £5.95	1
Publisher: Scorpto Gamesworld	Publisher: GB Standard	Publisher: Telegraph Publica-	(
Address: 307 Corn Exchange Buildings, Cathedral St, Man- chester	Address: Church Row Cham- bers, Franklands, Longton, Preston, Lancs	Address: 135 Fleet St, London EC4P 4BL	





Even software houses can't let Sir Clive forget his car experiment, and Scorpio is no exception. A good, simple, tonguein-cheek game that puts you in the seat of a C5 that can fly and do 60 miles without stopping.

The first screen offers options of Learner, Sunday, Experienced or Advanced driver and Instructions; which explains that returning home from work at a software house you meet Honest Lez, who sells you a C5 at a bargain price of £399 99, which you drive home.

You start off with four batteries and it moves across the screen unaided. Failing to avoid obstacles such as ghosts, trees, cats, walls and runaway prams causes you to lose one each time

The first part of the game requires you to collect batteries from each of the screens and the second part sees you driving through rush hour city streets. There's an extra life given after screen 20. Each screen is one mie long! and the number at the top states how many miles left While it is assuredly good value for money, it may be that for those who are used to 3D representations the graphics will cause frustration. You do not move behind trees or walls but above them — otherwise you'll crash into the treetop folage, for example. Once used to this, and that the sky itself is an obstacle — it is a fun game.



Decision Maker

The Brainpower series of tutorial and application programs from Amsoft continues to expand.

Widening the range of subjects covered, this program comprises the three elements that have now become standard format in this series: a comprehensive instruction book, a dedicated tutorial and the main application program.

Learning with the computer is more expedient than previous methods. This is especially noticeable where the discipline is complex and the conventional learning process arduous.

Decision analysis is all about making the best choice from a list of options. Decision Maker ensures that within pre-defined parameters the best choice is offered for consideration.

Many of life's decisions have a pecuniary element attached to their final choice, so it will come as no surprise to learn that this program leans in this direction, and is excellent value for money.

The instruction book comprises 12 chapters, each dealing individually with the various attributes specifically associated with the subject. of decision analysis is therefore casily accomplished, resulting in a thorough appreciation of the subject.

During the teaching process the screen display is largely devoted to menus and tree diagrams. Eye strain is reduced to a minimum by printing most of the textual instructions in the book.

Several enlightening examples are used throughout the teaching program. Jumping back and forth from one to the other was a little disconcerting. Perhaps one good example embracing all the main points would have added to the overall clarity.

The application program allows you to evolve your own trees tailored to suit your own problems. The analytical tree is similar in appearance to a family tree turned sideways.

Each branch culminates in either a decision or a chance label, subsequently leading to a termination.

In its entirety, the tree is displayed in mode 2; close inspection of an individual branch is shown in mode 1, making for easy reading

On completion, the tree can be modified using the sensitivity procedure. This alters all of the associated products, giving a valuable insight into the way minor changes of parameter values cause major alteration to the end result My only real criticism of this program is the old moan about the slowness of sequential file handling with cassettes. This is only a chore during the teaching process which once learned is no longer relative. Progress was accelerated by transferring the program to disc storage, which is how it is packaged. Slightly expensive for occasional use, though time- and money-saving if well worked D.H.

AMSTR



Caverns of Sillahc

This game demonstrates its originality by its name. Yes you guessed it, it's the author's surname in reverse — neat, eh? in fact, that's probably the only original bit of the game, as you will soon surmise

According to the scenario printed on the cassette insert, the game involves exploring subterranean caverns and retrieving agricultural androids. In order to achieve this goal you must avoid aerial mines and sundry obstacles. Your vehicle, a converted agricultural robot sprayer - sic - is equipped with the mandatory plasma guns. Apart from a few cosmetic changes, this game is effectively very similar to Fort Apocaplypse. This is particularly evident in the underground section

The graphics are clean, colourful and well designed. Animation and scrolling are smooth and well implemented.

Your spaceship looks rather like an ovoid with big ears and has an annoying habit of dropping to the ground unless you take suitable action. To add to your problems, the ship has

limited fuel reserves. Although

Price: £1.99

Publisher: Scorpio Gamesworld

Address: 307 Corn Exchange Buildings, Cathedral Street, Manchester



A concise explanation of the teaching method adopted for use with the tutorial program is followed by a fully worked example.

Purporting to instruct the newcomer in the compilation and comprehension of analytical trees, the tutorial program is used in very close collaboration with the first part of the instruction book.

Progress through the course is geared to your own speed of learning. Test routines abound to ascertain your understanding and familiarise you with the procedures.

A painless transition from simple to more complex aspects

Price: £24 95

Publisher: Amsoft

Address: 169 Kings Rd, Brentwood, Essex



Overall, this program is well written and does have an addictive element. This factor, however, is due more to the concept than the implementation. The instructions are a model of poor grammar but were good for a laugh. M.W.

Price: £7

Publisher: Interceptor Micros

Address: Linden Hse, The Green, Tadley, Hants _



T.W.



Maze

If you think you can use a compass blindfold then this game is for you. The aim is to find your way through a twodimensional maze and find objects which will enable you to gain entry to a higher level.

Three coloured tags must be found and dropped into an indestructible box. When this has been done the box can be opened to obtain an electronic security key which will give entry to a computer controlled hft to a higher level

You start with three lives and three bullets in your gun, which you use to destroy the robots. You can gain extra bullets by running over power points. Although the robots can be heard approaching, it is difficult to ensure you are pointing in the right direction to shoot them and in the meantime they can kill you. The higher the level, the more robots you have to contend with.

Maze is too complex to



Moon Buggy

Something a bit different in the arcade game department. Alter loading, a moonscape, with quite a lot of detail is presented, with the front section strewn with rocks and holes scrolling past. You control a fairly crudely drawn six-wheel moon buggy which can be accelerated, decelerated and jumped by means of the joystick. In addition, you have at your command laser blasters and rockets.

For a few seconds, life is simple, jumping holes and blasting rocks. Suddenly, however, you are assailed from above by a flight of alien ships. Now you have three things to cope with. Hit a rock, and you crash; get landed with a rocket and you explode, but fall into a hole, and all three sets of wheels come off and go sailing by! Strangely, should you miss one of the alien ships, it flies backwards, with a jet emanating from its rear, and makes another bee-line for you' Equally disappointing is the rather unimaginative use of sound, and the rather unexciting crashes.

Should you survive, the next



Repton

Here's your chance to win £100! Superior Software are offering this to the first person who can complete all twelve screens of their latest release, Repton. Proof of completion must be a photograph of the congratulatory message and the closing date for entries is September 30th

Each screen has a different maze layout, through which you have to dig to reach diamonds. When all of them have been collected you are given a password that must be entered to allow progress to the next screen. Rocks are stategically placed throughout the tunnels. These will fall when earth is removed, so a carefully planned and cautious route must be taken to avoid being trapped or squashed. On the first eight screens there is a map available to help you.

The first screen is easy to negotiate, but after that some diamonds will be locked away in safes. To open these a key must be located. Eggs are also encountered from which may hatch a hungry reptile, hot on your beels.



graphic adventure throws you in the midst of a gargantuan nightmare

Your phrenetic trip continues until you find the alarm clock and set it to wake you up.

Starting with a demo routine that gives some indication of the mindbending hazards ahead, the game incorporates a multitude of screens, all obviously the result of considerable artwork.

As a Wally, you control the movements either with a joystick or through the keyboard.

A careful eye must be kept on the amount of energy remaining in the snooze time. This is depicted as a rapidly diminishing glass of milk.

Everything in this nocturnal fantasy is larger than life and positioned without rhyme or reason. Don't be surprised to find a spaceship at the bottom of the staircase!

Overcoming the various hazards can only be achieved if you are carrying the right articles at the right time.

In true adventure tradition the objects collected must be dropped and swapped until you are tooled up in the right configuration.

Colliding with certain antiwally mobiles saps your energy. You can only restore it by

erever you want. By pured guesswork, how- vas able to identify 6 is, but not, worst luck, or the final screen. W
95 Price: £8 95
- Superior Software Publisher: Amsoft
Dept C, Regent Hse, Ln, Leeds LS7 1AX wood, Essex
TRON - CON AMSTRAD



Osprey!

Based on factual events surrounding the magnificent osprey, this is a strategy game for younger players.

The Royal Society for the Protection of Birds has engaged wardens at Loch Garten on Speyside since the mid-1950s, when for the first time in half a century two of these birds were seen nesting

Now, after 30 years' vigilance there are about two dozen pairs and the numbers are slowly increasing. Accompanying the software is a 30-page colour booklet giving a more detailed history of events leading up to the return of the osprey to Scotland

In attempting to do even better than the RSPB, your responsibility is in deploying a varying number of wardens in the most effective manner. Most harm and damage is caused by egg thieves and noisy motorists; an important part of the strategy involves educating the public to an awareness of these problems.

The main screen displays are used alternately. The first one is



Tapper

A superbly drawn loading screen leads, after a jolly tune, straight into a demonstration of the game which revolves around the working life of a frenzied bartender, who tries to keep an endless flow of thirsty customers contented. The next screen allows you to; read three pages of clear instructions in redefined character set; change the number of players; change the skill level, and choose keyboard or joystick.

You have to keep throwing sodas, collecting tips and the empty glasses that customers sling back to you. If you supply too many sodas, fail to collect an empty glass or fail to serve a customer on any of the four tables then you lose one of your four lives.

Successfully serving all the customers in the first, Old West Saloon leads to the Jock Bar, then the Punk Bar and finally the Space Bar with a visit to the Soda Bandit's Bunko Booth between each screen, where you must decide which Pepsi can is unshaken and won't spray you



Herbert's Dummy Run

Herbert's at it again — making a nuisance of himself as in 'Everyone's a Wally'. Now he's a nappy clad, walking toddler wandering off while shopping with Wally, and Wilma in a department store.

The tune 'Babyface' signals that LOADing's been achieved, offering options of Sinclair Kempston joysticks or keyboard. The game starts with Herbert in the Toy Department needing reuniting with his parents in the Lost and Found department before the store closes at 5 30 p.m

As one would expect from Mikro-Gen, the game is wellplanned and designed with superbly drawn and coloured screens. The animation is smooth and new screens appear when Herbert moves through doors — or takes a short cut to eight of the many rooms via a lift with four coloured keys that make a face smile when hit.

The screen top has a large teardrop, which fills when Herbert is hit by any of the various attacking inhabitants of the store; three small teardrops showing lives left; time — starting at one o'clock — and two items collected, starting with a



Classic Racing

Your management of a stable of 16 racehorses — along with a fair sprinking of luck — will determine who wins this fascinating game

A maximum of six players can participate; less than this number and the computer fills the gaps. This is a bit iffy really. After all who knows as much about the program as the chips?

Financial resources can be gained either by winning a share of the prize money in each race, or by winning bets on the right horses. The winner is the player who fimshes the game in the most affluent position.

Each race meeting consists of six races. If you are going to attend all 16 meetings then get the beer in first. It will take all night to complete.

Played amongst six of us, we found the shorter version of just four race meetings was riotous, and had us all elbowing to see the finish line approaching.

The graphic representation of each race is excellent with each horse vying for position just like for real¹

	entirely textual, giving the	when it's opened.	chocolate ten pence and tennis	No affinity to the sport is
	status quo both at the beginning	Selecting the correct can in	raquet	necessary. The full set of six
	and end of each season.	the Bonus Round scores 3,000	When Herbert loses a life the	players maximises the
	Though unsophisticated, the	and picking up tips 1,500, plus	large teardrop empties itself by	interaction with coarse
	graphics screens are bright and	the appearance of two dancing	causing a cloud to rain on him!	commentators imitating course
	clear. A view of Loch Garten is	girls on stage causing customers	— just one refinement that puts	commentators.
	shown, along with the car	to watch and allow drinks slung	Mikro-Gen consistently out in	All the races are run over
	parks, wardens nad egg theives,	to them to fall off the bar. Each	front. After using all three lives	various distances, giving the
	who are seen pilfering at night.	mug caught scores 100 points	you are told that Mummy and	owners a chance to see each
	A daytime view shows the	and a screen completed 1,000.	Daddy are still in the 'lost and	horse's form. Winning the
	osprey in flight and diving for	The score is displayed screen	found' with a number of jelly	classics puts you into the big
	fish	top left, and lives at right.	babies and the time until	money league and increases
	Another worthwhile program	A very playable game that	Herbert survived.	your chances of winning the
	from Bourne Educational Soft-	easily becomes addictive, but an	Must leave now — haven't	entire game.
	ware, marketed by Amsoft	unserved customer can become	found 'lost and found' yet	A pricey program but well
	D.H.	murderous — be warned. T.W.	T.W.	worth the gamble. D.H.
1	Price: £9 95	Price: £7.95	Price: £9 95	Price: £8 95
1	Publisher: Amsoft	Publisher: US Gold	Publisher: Mikro-Gen	Publisher: Amsoft
	Address: 169 Kings Rd, Brent-	Address: Unit 10, Parkway Ind	Address: 44 The Broadway,	Address: 169 Kings Rd, Brent-
	wood, Essex	Centre, Birmingham	Bracknell, Berks	wood, Essex



INICATIO FLECONNI

n the past telecommunica tion has been confined to industry and commerce but advances in technology in the field of microcomputers and modems have led to a drop in price of hard-wired modems which in turn has encouraged home computer hobbyists to jump on the telecommunication band-wagon. They can now leave messages, send data, swap programs etc. and as a consequence the modem has become a popular peripheral Articles on telecommunication were virtually non-existent a few years ago but they have now mushroomed and become a regular feature in many magazines, indeed there is now a magazine which specialises in telecommunication, and advice for the domestic user is generally more available Home computers with a R5232 port can be linked to a telephone via an acoustic coupller or a modern. If the computer is not fitted with RS232 port, then it is necessary to obtain a suitable interface specifically designed for the computer. There are numerous modems on the market, some of which are still awaiting BT approval. This has caused confusion to prospective purchasers. I am of the opinion that one should avoid acquiring a modem with a single baud speed as it may mean additional modems are needed to access different databases.

This proves uneconomical and impracticable if one has to fiddle with cables, perhaps resulting in link-up failures. A better purchase is a modem with 'originate' and 'answer' modes which are essential for Dircomms (back-to-back or computer to computer). An initial voice link-up is not possible for deaf people, so we have adopted the following procedure: recipient of the telephone call is set to 'answer' whilst the person making the call is in 'originate' to complete the loop. We have also settled for TX300/RX300 as the standard for initial linkup, perhaps using TX1200/-RX75 for downloading programs and lengthy text. Current trends in modem design are very attractive when software controled with autodial/auto-answer and in some cases with auto-scan facilities. To sum up I would suggest a hard-wired modem which has variable speeds to give maximum flexibility and enables the user to access virtually every database and bulletin board available. For portability, an acoustic coupler is acceptable because they can be battery powered.

fine example of software in ROM for use with the BBC micro. It gives the operator a wide choice of facilities to call upon. The Maplin modem for the Spectrum has the terminal program in ROM contained inside the modem itself. Specterm is a terminal program on cassette tape for Spectrum users not using the Maplin modem. But for Dircomms you need rapid access to the terminal program so a Microdrive or Wafadrive will be necessary to store the terminal software. Having chosen the modern and software you are advised to step into the world of telecommunication by exploring the free bulletin boards, thereby meeting new friends and gaining confidence on the way They are very user friendly, just dial the number and you will be guided along by the appearance of menus which allow you to explore and make use of the facilities provided. Most newcomers tend to be tunid, feeling that they may corrupt the system. However, incorrect procedures will not damage the system, instead you will be further prompted by instructions.

Doreen Naylor, specialist in telecommunications, gives you the rundown on how it all works



Software

Terminal software is required to drive the modern. It is convement to have the program in ROM as it enables one to log on instantly and is a necessity in Dircomms. The Commstar is a Example of menu (R) ead read messages on board (Q) uick-scan quick-scan of messages on board (L) eave leave message on board

(M) all electronic mail section (S) igs special interest groups (T) ime elapsed time (G) oodbye terminate session download (D) ownload programs (C) hat talk to SYSOP (system manager) Command:

Pľ

If you press key L at Command you will be taken to 'Leave Message on Board' section and a further menu will appear with options etc.

Some bulletin boards have a time limit of around 12 minutes so it's handy to have a printer online obtaining a hardcopy of the instructions, alternatively save into buffer and view offline.

Jargon Widely Used in Telecommunication

Modem An abbreviation for MOdulator DEModulator, it is an electronic device which interprets the signal that comes in and out of the computer, and translates it into a form which can be transmitted down a wire to another modem. This modem in turn is connected to a computer which understands it. Acoustic Coupler A device into which the telephone handset is inserted. The coupler converts electrical signals sent to it by the computer into audible tones that can be sent down the telephone line and understood by the computer.

The measurement of Baud speed sent down the telephone line, generally measured in bits per second. Therefore 300 baud = 300 bits per second. Widely used baud rate is 1200/75, as used for Prestel databases. followed by 300/300 baud. Full Duplex transmitting data can be sent in either direction at the same time. Half Duplex transmitting data can be sent in either direction but only one direction at a time. PSS British Telecom Packet Switching Service is a cheap and fast method of sending dataonly over the ordinary telephone network. There are only 25 PSSE points in this country: Aberdeen, Belfast, Birmingham, Brighton, Bristol, Cambridge, Cardiff, Edinburgh, Glasgow, Ipswich, Leeds, Liverpool, London (3), Luton, Maidstone, Manchester, Newcastle, Nottingham, Portsmouth, Reading, Sheffield, Slough. More are planned in the

communications network eg PSS.

C 1

Εt

Databases **Telecom Gold**

This system can be accessed via the PSS Network and offers a 24-hour service by British Telecome Electronics Mail, otherwise known as Email. Both sorts of equipment are acceptable; baud 300/300 or 1200/75 but I find 300/300 the better speed. It's so frustrating uploading at 75 baud. The 'Chat mode' is a real boon, you can chat with anyone on the system in Britain, or abroad, at the cost of a local call through PSS. British Telecom concentrates on communication between dispersed subscribers rather than the communication of information held on the host system, as with Prestel

Subscribers to Telecom Gold get a NUI number (Network Users Identity) together with a password which can changed by the subscriber for security. Cost: Official cost for joining the system is £100 + VAT. The [facilities are too numerous to list here, but the main charges are as follows:-

= 0800-1900 Monday to Friday excluding public holidays) First 250 hours charged on any bill Next 250 hours charged on same bill

Thereafter Cheap rate = all other times Filing:

First 2500 units Next 2500 units munication during elections and Trades Unions such as NALGO and the National Farmers Union, employ Prestel as a central information source. Major banks and Building Societies have made 'armchair shopping' popular through schemes such as 'Homelink' run by Nottingham Building Society. But the successful closed user group is Micronet, Aimed at home micro users, programs can be downloaded free or at reduced DIDCCS.

11

The speed is uniform. baud 1200/75; receive at 1200. send at 75 which is the standard

Cost: There is no initial charge to join Prestel, you only pay quarterly mailbox rental at £5. An extra £10 per month for closed user group eg. Micronet will have to be added to the bill

as well as frame charges etc. 0800 to 1800 Monday to Friday 0800 to 1300 Saturday At other times

Access to Prestel via PSS incurs a further charge of 2p per | ding on the success of the minute).

Facilities: Armchair shopping, miscellaneous information, telesoftware, reviews, entertain-Connect times: (Standard rate ment, banking, closed user

any bill same bill	- 10.5p per min - 8.5p per min - 3.5p per min
ies	- 3.5p per min
- 20p per 2048 cha	racters per month

It must be emphasised that the only means of accessing Compunet is via Commodore's own modem. It cannot be used to access other databases or bulletin boards

I AN

To access Prestel, one would have to download a special viewdata program from Compunet but this can't be used to download from Micronet without the official modem

After a short exploration into Compunet, I found Compunet's error-checking protocol procedure annoyingly slow when compared with Prestel and leads to additional time online.

Cost: A Commodore modem comes complete with ID, password and a year's free subscription. Thereafter it is likely to be £30 per year, depen-

> - 6p per minute - 6p per minute - Free

system

Facilities: Mailbox, telesoftware (downloading and upload), banking, 'armchair-shopping', Comp-u-card etc.

This system is not yet on PSS which makes it expensive for some users.

Bulletin Boards

There are numerous bulletin board systems at either 300/300 or 1200775. Lists of boards and telephone numbers can be found in most computer magazines. One snag is most BBS have only one line so it is sometimes impossible to access. I've only been able to log on Microweb once in four months! Cost: Systems are mostly free, perhaps a once only charge of a pound or two to join

near future. Modes entry point into a

Any further units Facilities:Sending mail, filing system, telex and international mail, noticeboard (for sale or wanted), conferencing system,

diary system, radiopaging system, telemessage system, forms system (pre-formatted messages ideal for the salesman), 'chat' system, and spelicheck etc.

Could this system eventually replace the conventional Postie?

Prestel:

This was the world's first viewdata service set up by British Telecom, in 1978 and aimed at business users. Information providers use Prestel as host and charge the public for accessing their information. A frame of information costs up to 10p.

There are many subdivisions within Prestel which are closed user groups. The Labour Party uses it for administrative com-

- 15p per 2048 characters per month - 10p per 2048 characters per month

> group etc. There are about 350,000 pages of information available

Compunet:

Database is similar to Prestel but aimed at Commodore users.



IF YOU DON'T LOSE YOUR TEETH!

Bite hard on your gumshield and up with your guard as you enter the battle with 3D action and take on the fight of a life-time against Cimbel-Lin, Ted Matare, Jansen Sino and Fighter Bull. Emerge victorious from all 4 rounds and you'll have earned the World Championship Crown.





YOU'LL LOSE YOUR

Take your life in your hands in a fight of a different kind against the horrors of a bygone age as Johnny Jones, modern day hero and explorer extraordinaire, has finally discovered the the lost Temple of Abu Simbel, built by the great Pharoah Ramses II over 3000 years ago. In frenzied desparation he enters this secret world and is drawn into a frightening adventure, threatened by the Pharoah's curse, in constant danger until he can reach the inner mortuary chamber.



RERVE

NERVE TINGLING SUSPENSE AND TEETH SHATTERING EXCITEMENT FROM TWO NEW GREMLIN GAMES

Gremlin Graphics, Alpha House, 10 Carver Street, Sheffield S1 4FS. Tel: (0742) 753423

R

Try this version of the classic arcade game from Stephen Gray

In this version of an old arcade favourite, you must guide the Maze Mauler through the maze, gobbling the dots and dodging the ghouls. Eat a red power pill for a chance to get your own back and gobble the ghouls. Eat all the dots and you move onto the next faster level.

The controls are: Z-left, X-right, :-up, /-down.

Variables

S% score L1% lives DLL% delay speed of game L% level P% dots caten

10 REM SABEESSE 20 REM # Maze Mauler 30 REM 8 by Stephen Gray \$ 40 REM & BBC Model B SO REM & For H C.W. 60 REM # Grayface 70 REM \$\$3388888 90 ON ERROR IF ERR+17 RUN ELSE MODE7:REPORT:PRI NT" of line "(ERL;END 90 MODE 7: PROCINIT 100 62=0:L12=3:DEL2=75:L2=0 LLO MODE STPROCECREEN 120 PROCMALLER 130 IF PX-284 PROCLEVEL:GOTO 110 140 IF DZ=1 AND KZ=1 DZ=0 150 IF DX+L PROCDEAD(IF LIX>0.GOTD 110 160 IF LIX-0 GOTO 1540 170 PROCEHOULS 180 IF K%=1 AND TIME >400 VDU19,1,10;0; 190 IF K%-1 AND TIME>500 VDU19,1.1:01:1.%+0 200 FOR A=1 TO DELX:NEXT 210 GOTO 120 220 DEF PROCHAULER 230 IF XX+GXX AND YX-BYX OR XX+HXX AND YX-HYX DX = 1

240 MXX=XX:MYX=YX 250 IF INKEY(-98) AND PDINT(XX=64,YX) 3 XX=XX=6 4:G010 300

D% are yo N% have y N% have y N%, Y% N GX%, GY% HX%, HY MX%, MY ords BS black b MS Maule GS ghoul G% which DataS, Char to print H%(5) hi-s N\$(5) hi-sk V% rank	Area ou touching a ghoul? You caten a power pill? Mauler's co-ords Se ghoul 1 co-ords Se ghoul 2 co-ords Mauler's last co- block T score array core names array Ar 6010 260 4: 6010 270 4: 72: 60 290 300 4: PRIN 310 4: 720 300 4: 720 300 4: 720 300 4: 720 300 4: 720 300 4: 720 300 4: 720 300 4: 720 300 4: 720 300 5: 720 3: 720 3: 720 3: 720 3: 720 3: 720 5: 720 3: 720 5: 720 3: 720 5: 720 5: 720 3: 720 5: 72	300 IF INKEY(-67) AND PDINT(XX+64.Y%)() 300 IF INKEY(-73) AND PDINT(XX+8.YX+32) TD 300 IF INKEY(-105) AND PDINT(XX+8.YX-32) 0TD 300 GOTO 350 IF POINT(XX+30.YX-16)=2 PX=PX+1:5%= ITAB(0,1):5X:50UND1.1.60.1:VOU5 IF XX=6XX AND YX=6YX OR XX=HXX AND IF DX=0 AND POINT(XX+32.YX-16)=1 AN 19.1.2:0::TIME=0:SOUND 3.3.100.5 MOVE MXX.HY%:PRINTB% MOVE X2.YX:PRINTM% IF DX=1 AND KX=1 AND GXX=XX AND GYX	3 XX=XX+6 <>3 YX=YX SX+10:VDU YX=HYX DX D KX=0 KX
Ho 80-100 inst 10-210 ms 230-370 Mt 380-520 gh 530-940 set 954-1100 Struction 1110-1190 1200-1290 1300-1530 1540 starts	2, 4, 3w it workstaiwanontaiwanonain loopauler subroutineouls subroutineouls subroutinetip screen subroutineinitialisation and in- nes subroutinenew level subroutinehi-scores subroutinehi-scores subroutinenew game	S, 11GX2=5761GY2=4801HOVE 576, 4801PR X+2001PRINTTA8(0,1):8X1VOUS:ENDPROC IF DX=1 AND KX=1 SOUND 2,4,53,1:HX2: VE 704,480:PRINTG\$:VDU4:8X=SX+200:PI VOUS:ENDPROC ENDPROC DEF PRQC6HOUL9 IF KX=1 MOVE GX2.GY2:PRINTG\$:MOVE H MOVE GX2.GY2:PRINTG\$:MOVE HX2,HY2:PI IF GX=1 G2~2:GOTO 470 ELSE G2=1 MOVE GX2.GY2:PRINTG\$ IF X2/GX2 AND POINT(GX2+64,GY2) 2</td <td>5X%=5X%+6</td>	5X%=5X%+6

G

430 IF YX>GYX AND POINT (GXX, GYX+32) <>3 GYX=GYX+3 2 ELSE IF YX(GYX AND POINT(GXX,GYX-32)<>3 GYX+GYX+ 32 440 MOVE GX%, GY% 450 PRINTG® 460 ENDPROC 470 MOVE HXX. HYX: PRINTGE 480 IF XX>HXX AND POINT (HXX+64, HYX) <>3 HXX=HXX+6 4 ELSE IF XX<HXX AND POINT (HX2-64, HY2) <>3 HX2-HX2-64 490 IF YX HYX AND POINT (HXX, HYX+32) <> 3 HYX=HYX+3 2 ELBE IF YX<HYX AND POINT (HXX, HYX-32) <>3 HYX-HYX-32 500 MOVE HX%. HY% 510 PRINTG® 520 ENDPROC 530 DEF PROCECREEN 540 VDU19, 3, 1% MOD4+4;0; 5 550 RESTORE 600 560 FOR RON-1 TO 29:READ Datas 570 FOR COL=0 TO 19: Char#=HID8(Data#, COL+1, 1) 380 MOVE COL164, ROW132; IF Chard="W" GCOL 0, 3: VDU 254 ELBE IF Chart="." SCOL 0,2:VDU253 ELSE IF Char \$="1" GCOL 0,1:VDU252 ELBE GCOL 0,3:VDU 251 590 NEXT, 600 DATA" MAAAAAAAAAAAAAAAAAAAAA 620 DATA-W. WAANAAAAAAAAAA. H" 630 DATA"W.W.....W.W. 640 DATA"H ... WANNA ... WANNA ... W" 660 DATA"N ... WAAAAAAAAAAA ... W" 670 DATA" WWW..... W..... W..... WWW" 680 DATA"W ... WW. .. WW. .. WW. .. W" 690 DATA"N. N. NN. N. NN. N. NN. N. N. 710 DATA"N. MAANI, MAANI, MAANI, W" 730 DATA"H. W. MANAWXXXMANN. W. H" 750 DATA"H, H, MARANXXXMARH, H, H" 770 DATA"N, MARAN, MARAN, MARA, M* 790 DATA"N. N. WN. H. WH. N. NH. H. H" 800 DATA"W WW WW W"

870 DATA"H ... WARAAAAAAAA

830 DATA"W.W.....W.....W.N"

840 DATA"H ... WWWWW... WWWWW... H"

850 DATA"W.W.....W.....W.W"

BAO DATA"N, WWW.AAAAAAAAAAAAA. W"

890 DATA"MAAAAAAAAAAAAAAAAAAAAAAA

0%CHR#0+CHR#255:E#=CHR#18+CHR#3+CHR#1+CHR#225 1000 ENVELOPE1, 1, 40, -10, -10, 1, 1, 1, 120, -3, -3, -3, 12 0, 301 ENVELOPE 2, 1, 0, 0, 0, 1, 1, 1, 120, -1, -1, -1, 120, 601 ENVELOPE 3, 1, 16, -16, 16, 5, 5, 5, 120, -2, -2, -2, 120, 301E NVELOPE4, 1, 4, -4, 4, 10, 10, 10, 120, -1, -2, -1, 120, 0 1010 VDU134,157: PRINT 1020 FOR A=1 TO 2: VDU134, 157, 141, 132: PRINTTAB (6) | "NAZE HAULER"INEXT 1030 VDU134, 157; PRINT 1040 PRINTTAB(12) (CHR\$129) "by Stephen Gray" 1050 PRINT** In this version of an old favourity quide the maxe mauler around the screen, gobblin g the dots. Avoid the randomly - moving ghouls, un less you have swalloweds red Pill, then you can go bble the" 1060 PRINT"ghoule. Eat all the dots to finish the GAAS." 1070 PRINT*CHR6130; *CONTROLS***CHR6131; *LEFT 7 RIGHT X***CHR#131+* UP + DOWN /* 1080 PRINT"CHR\$1341"Press SPACE to start"| 1090 A=GET: IF A<>32 GOTO 1090 1100 ENDPROC 1110 DEF. PROCLEVEL 1120 LX=LX+1 1130 DEL%-DEL%-25 1140 FORA=1 TO 2000:NEXT 1150 RESTORE 1190 1160 FOR GHI TO 9: READ F, H: SOUND 1, 2, F, H: NEXT 1170 FOR A-1 TO 5000 NEXT 1180 DATA 33,6,21,3,33,6,21,3,33,3,21,3,33,6,49,6 .53.6 1170 ENDPROC 1200 DEF PROCDEAD 1210 FOR A=1 TD 2000: NEXT 1220 LIX#LIX-1 1230 MOVE XX, YX: 6COL0, 1: VDU225 1240 FOR A#53 TO 5 STEP-1 1250 BOUND 1.-15, A, 1: NEXT 1260 FOR A+1 TO 500:NEXT 1270 SOUND 0,-15,2,10 1260 FOR A-1 TO 2000; NEXT 1290 ENDPROC 1300 DEF PROCHIGH 1310 IF 8%(=+K(5) 60TO 1470 1320 VX-0 1330 REPEAT: VX-VX+1:UNTIL BX HX (VX) 1340 FOR N=5 TO VX+1 STEP-1:NB(N)=NB(N-1):HX(N)=H X(N-1) INEXT 1330 HX (VX) =8X1N# (VX) =** 1360 PRINT" ": FOR A-1 TO 21VDU129, 141: PRINT"YOU A RE IN THE FABLLOUS FIVE ! ! ! ! ! ! NEXT 1370 PRINT **** CHR\$134" ENTER YOUR NAME***** CHR\$1 311 271 1380 #FX18,1 1390 A-GET 1400 IF A=13 GOTO 1470

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HOME COMPUTING WEEKLY 25 June 1985 Page 19



Aries B20 RAM board with which the speech ROM is compatible.

 UTTER is the command via which you are able to input a sequence of phonemes. The command takes the format •UTTER (tone) (phoneme) (phoneme) The value of tone specifies the way in which the word is to be spoken, e.g. forcefully, questioningly etc. Having decided upon a value for tone you then merely enter the sequence of phonemes that are necessary to produce the required word. The structure of the UTTER command lends itself very nicely for use with the OSCLI statement (Basic 2) e.g.

IG AB - T KEP K UK N P Y HOD T GHT 20 DECLI INTERNI + 48

in this way vocal responses can be read into variables from data statements and then output via the UTTER command.

Not content with providing the BBC with fluent speech, the ROM also provides the command *SING. The *SING command takes the following format *SING (pitch) (note) (phoneme) where pitch is represented by a whole note i.e. no sharps or flats, and is entered as a letter C top B Note specifies the length of the note, this can be anything from a semiquaver to a semibreve, and finally you supply the phoneme or phonemes which are to be sung. Other commands which are available are *SYNC which halts the programs execution until the computer has finished speaking, and finally *VOICE which allows the user the choice of five voices of differing pitch. The Computer Concepts Speech ROM provides BBC computer users with an opportunity to get some use from that white elephant that is otherwise known as the Acorn Speech System.

like.

The Speech ROM frees you from these vocabulary constraints, allowing the construction of words from phonemes. Phonemes are the sounds from which we construct our words

Before the speech ROM can be used it must first be enabled. by typing *SPON and pressing the break key. As a matter of convenience the Speech ROM defaults to its disabled state when the computer is switched on, or the user presses Ctrl plus Break. This is because the ROM requires two pages of memory (512 bytes) for its own use. This memory is stolen by raising the value of PAGE: on a disc-based machine the new value of PAGE is therefore &1B00, or &1C00 should you be using an 1

Price: £33 95

Manufacturer: Computer Concepts

Address: Gaddesden Pl, Hemel Hempstead, Herts HP2 6EX





Peter Sweasey has now recovered from the dreaded lurgy and is back with a bounce

ello again, and welcome to Ventures, HCW's 📕 regular column dealing with, as the name implics. edventure games, plus the odd arcventure (arcade adventure) 100. My excuse for the delay is I've been down with the reat life equivalent of the dreaded lurgy I m sure it was some irate Duckworth programmer, desperate for revenge after my harsh comments 2 few weeks back, who drugged my tea hang on. I don't dank tea!

Anyway, while I've been out my death bed, probably in a frantic attempt to avoid my critical eye, the software houses have been rushing out products, causing something of a backlog on my deak Still, late reviews are better than no reviews 21 all, aren't they?

See if you can spot the link between this week's reviews key of Hope from Games Workshop and Confidential from Radar Games, other than the fact they both have e's in them. All will be revealed ...

Reviews

I knew it was going to be a tough assignment. I pulled on my Columbo myle mac and examined the package they had pushed through my door that morning; it was a big one inside was a folder, containing a big orange map, a note book. and the casselie fiscil. My job was to assume the name Craig Adams and investigate the disappearance of prominent local burmersman Mr Richards "Be cager, resourceful, play to with, to solve the task which lies within " thy med the game at the start

left the building and drove off in my customised green sports car I was heading for the home of the distraught Mrs Richards, who lives in Dale End J followed the map, and although I discovered that it was somewhat out of proportion, " was easy enough to find the house, and I was soon knocking on the deor

Once inside, I typed INTER VIEW MRS AICHARDS, upon which sho hold me her sorry tase: They's typed the same uting --- and she responded in exactly the same way. I righed 77no Sherlock Holmes this.

This is a prime example of the game's basic fault it lacks intelligence Unfortunately, the reason is due to that wonderful u dity. The Quill I see a lot of Quilled games, and many are let down in the same areas Firstly, the white on blue text - not very appealing to the seasoned gamer Then there are the Quilled messages, like "Have a more day" and "I'm ready for your instructions", and simple graphics made of UDGs Other annoying features are REDES-CRIBE withdut LOOK, although Confidential does not do this, and the lack of a TAKE ALL command But the worst thing is the unfriendly vocabulary.

At one point in Confidential, I found "a reel of cable and a sack of grave!" The program accepted GET RFEL but not GET CABLE Hah! 1 thought - ve worked this out So 1 typed GET SACK, only to find the correct words were GET GRAVEL If the game is going to be picky, it can at least keep to a set of rules. The above example is just sloppy programmins The sad thing is, many of the faults could be avoided Colours can be shanged at the press of a button, and synonyms added, even on the original Quille Using version C. as a professional games should, the sury messages can be redefined, a TAKE ALL command added, and memory used more efficiently. If Quilled games are going to be marketed, as I believe many should be, they must be property polished as described above Otherwise, they all lurn a out the same, to the detriment. That said. Confidential does have some redeeming features

The puzzles are entertaining, find EXAMINE is very responsive. EXAMINE KEY will tell you that it is small and chrome, whilst EXAMINE MRS RICHARDS responds "She slape your face!" There is a mice variety of characters, although they are rather cardboard. The complete package, including map and competition is not exactly original but well implemented On Rhe whole, good fun, reasonably priced, ard a rating of keen. The game is currently available for the Spectrum costing £6.95, and is being converted for the C64 and Amstrad 1 wish Radar Games, a new company, the best of luck --- and hope they use version C in the future

Another game which uses The Quall (there's the link for those who are still puzzling) is key of Hope Here, however, use is so good that it is almost unre ognisable: and seeing as] could find no mention of it on the bex, I expect most people will be fooled. This is the sequel to the highly acclaimed Tower of Despair, and the scenario is probably best explained in the words of Games Workshop. "The White Goddess of Truth is waging a secret war against the hideous power of the Demoniord Mainor, whose essence has fused with that of his age-old prison, giving him horrendous new abilities; his news, magics are slowly transforming the face of the glone, and Aclandor lies nevaged, before him. She has summomed you, Warrior-Mage of Castle Argent and Malnor's nemetis, to her aid".

Confidential is a detective adventure, a rarely successful breed Unly Sherlock Hoimes has come anywhere near, but even that was matred by program and punctuation bugs. Would this be an exception?

The game starts promi ingly enough, in Craig Alam's Detective Agency Descrip on is above average "Shadows from the trees in the park opposite r as upon the Victorian styled desk and chair The passing of traffic outside rattles a grimy casement window," and to my delight, "e program recognised the nouns chair and desk (although not window - can't expect everything [suppose')

On finding the correct key I

You shus arrive in the land of an unfamiliar body, and have to collect all the pieces of the Key of Hope before Mainor takes over the world Hardly the most original of scenarios ...

Once loaded, a rather average picture of a horse in front of a ruined castle appears. "The runs of Castle Argent he all around They are completely overgrown, Confusion sweeps through you as you attempt to stand, your mass seems strangely distributed in your new body, Also visible a snowwhite horse, plain ring and gluttering sunsteel sword." The Quill messages like "What now? have been totally erased, and the character set redefined Each description starts with a specially designed, monastry style capital.

Wandering westwards, you find open country, soothing grass-

land, rolling downs, a dried-up Y stream, more open country/ more rolling downs, a/dried-ub stream, more open country, more rolling down L. this is soi a normal adventure/ In fact here the emphasis is more ion role-playing fantility explotation, rather whan varied location, and is I suppose more realistic An accurate map is thus difficult to draw; instead. just wander west/and you'll find the sea cliff, go south for the desert, and so on. This does not mean the game is dull or easy. indeed it is one of the hardest I have ever roviewed There are plenty of *fuzzles*, even if they are distributed over a rather wide areasy For Example a glowing bot tobsmap that can't be picked up bare handed, or a sinister slone circle-

I can't however, say I really enjoyed flus gathe. I feel it will not appeal to the mainstream adventurer - more to the roleplaying fut. It is, nonetheless, a competent program, and an excellent example of how to use The Quill. My rating is, again, keen. It costs £7.95 for the

Spectrum, with possible converslons soon

S)

Helpilhe

First upf more excellent valhalla lips from John Rundle. John has received some software for his efforts - as, indeed, you can by seading in the most intersting letter each fortnight. I left you last time searching for Skorner You should be in a cave in hell Give Ofnir to someone, go east twice, get Ofoir back, but drop your heimet 'East again, and Shomir is inside cheft. Stalle: Go to Klepto's Half To. go north, you must not be carrying Drapnir. Then go east from Frouble, you need wine but no ring — and don't forget | to regain Draphir, Jump from this cave, and go SE from the fey waste. To go north, you need a sword but no key. Skalir is in - guess what? - a locked chest. The next quest is Felstrong, but I'll leave you to puzzle over that a bit longer.

Remember Mark McGurn

was having problems ' with Return To Pirates' Isle h few months ago? Well, now he's almost finished, but he feels a bit annoyed he discovered a vital clue by fluke To be honest, I find inspiration is often the fun and mystery of is we large just as you feel like smashing the power plug into several smaller pieces, you try something totally ridiculous and it worksl_1_can't reality comment on the game, since Adventure International won't be releasing it until "some time later this year". TI-99/4A owners are in the lucky position of being the sole British players - Texas produced a run of cartridges just before they pulled out of the market.

Mark also asks if the Questprobe series is being released on the Texas. The answer, unfortunately, is not the only way Scott Adam's adventures can be fitted into the Texas is to make a carindge, and there are too few Texas owners to justify this being done. Perhaps if you all write to Adventure International....

Falking of Questprobe, The Hulk as still stumping many players. Now, 'It last, it can be revealed.. how to avoid the antsi you need to close your eyes, hold your nose, and plug your cars. They wop't be able to attack you then, and you can pick them up and take them to... well, that's for you to discover. That should help Mr. P J Piwowarski, who also asks what to do with Dr Strange. If you keep turning back to Bruce Banner, he will tell you to EXAMINE BASEBOARD IF you do this, and remedy the situation with some plugging substance, he will tell you how to be a strong Hulk.4. If you stul can't take the wax, examine that second dome.

Wally fans should be completing his epic arcventure by now. At the time of writing, 20 people had rung Mikro-Gen but the number has probably trebled since then. Anyway, a bumper Wally hint guide next time, along with a review of Dummy Run, the latest Mikro-Gen arcventure, and more. Until then, happy venturing!



Lords of Mid	7 00	Shuk Island	11.25	Beach bead	2.15
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ACORN ELECTRON ELECTRON VIEW ROM ELECTRON VIEWSHEET ELECTRON ROM GAMES COMMODORE 64 + CASSETTE + INT. SOCCER COMMODORE PLUS 4 COMMODORE DAISY PRINTER COMMODORE 1541 DISC DRIVE MICROVITEC MONITOR QL COLOUR MONITOR QL COMPUTER TELEMOD2 MODEM + S/W EPSON RX80 F/T +	Price 104.95 29.95 29.95 9.95 199.95 £109.95 £299.95 £169.95 £159.95 £359.95 £359.95 £359.95 £359.95
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In Alan Brack's program for the unexpanded VIC-20 you have to avoid the hostile wolves to get back to your vampire's refuge



praveyard, the vampirowin tempting to return to his coffin before daybreak. However, this isn't as easy as it

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VIC-20 GAME

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icens, as there are wolves who, inless they are destroyed, will keep him from his place of rest Each time the vumpire success fully reaches his coffin the number of wolves outside increases making his next Conney more difficult Una keyu Z up, X down B late N right M fire memory your joystick.

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- ARHARD ALLEN 1984

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D.D1 coffin SE fives SD skill level SF points C colours V volume S,S1 anund SC time limit

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Listing 1

5 PRINT****BY ALAN BRACK**** 10 PRINT J** POKE36879,31 20 PRINT ME*****VAMPIRE****** 22 PRINT MYOU ARE THE VAMPIRE - YOU MUST BE IN YOUR COFFIN BY DAYBREAK.... PRINT BEWARE OF THE WOLVES WHO WILL SLOW YOU DOWN 26 PRINT MIF TOO MANY GET IN THEWAY YOU CAN SHOOT THEMBUT YOU LOSE POINTS 27 PRINT HEACH TIME YOU FIRE 30 PRINT DIFFICULTY LEVEL WILL INCREASE EACH TIME YOUGET TO YOUR COFFIN.... 32 PRINT "DAYBREAK IS SECONDS AWAY SO HURRY! DILHIT SPACE TO CONTINUE" POKE198,0 IN GETASI (FAS() "THEN40 50 PRINT"," (POKE36879,28 60 PRINT TERMIKEYS=2,X,8,N,M=FIRE* PRINT* MANAGER USE JOYSTICK* PRINT MEEPRESS SHIFT & RUN/STOP TO LOAD MAIN PROG...." 70 NEW

Listing 📕

	POKE52,28:POKE56,20:FOR1=7424T07431:POKE1,0:NEXT1
31	FOR 1=7168T072314READA
32	POKEIJAINEXTI
-33	DATA56,56,124,124,254,254,254,254
200	DATA124,124,124,124,56,56,56,56
100	DATA65,119,127,107,127,99,20,20
36	DATA185,185,56,36,36,34,34,51,56,68,68,68,56,16,124,186
37	DATA185,185,56,36,36,68,68,102
	DATA251,251,251,0,223,223,223,0
38	DATA8,28,62,62,62,62,127
	SD=11SE=3:W=40:SF=0
60	PRINT "" # POKE36879,9 # POKE36869,255
	FORB=1T0W1R=INT(RND(1)+440)/U=INT(RND(1)+4)+3*POKE7724+R,2*POKE38444+R,U*NEXT
62	POKE0121,321POKE0143,32
66	M1=81431M=81211J=01C+307201V+368781S=368741S1=368771SC=801Y=01X=01A=01A1=01A2
67	A3=01A4=81A5=810=7981(D1=880310=5
68	POKE38606+A3,4:POKE38614+A4,4:POKE38764+A5,4
69	POKE38422+A,4:POKE38884+A,4:POKE38422+A1,4:POKE38443+A1,4:POKE38892+A2,4
78	POKE7702+A,6:POKE0164+A,6:POKE7702+A1,6:POKE7723+A1,6
72	POKE8172+A2,6:POKE7896+A3,6:POKE7894+A4,6:POKE8844+A5,6
-	

73 A=A+1+A1+A1+22+A2=A2-22+A3=A3+1+A4=A4+22+A5=A5+1 74 IFA=>22THEN90 75 IFA2=<-286THENA2=A2+22 76 IFA3=>BTHENA3=A3-1 77 IFA4=)176THENA4=A4-22 78 [FA5=>4THENA5=A5~1 79 POKE7954,71POKE8067,71POKE8157,71POKE8107,71POKE8139,71POKE7954+C,11POKE8067+ C,1 80 POKE8157+C,1+POKE8107+C,1+POKE8139+C,1+GOT068 95 POKE36876,247:POKES1,145 90 Y=0:POKE36879, INT(RND(1):8)+0:POKES, 160:POKES1, 150:FORT=IT050:NEXT:POKEV, 15 100 POKE37137,0+POKE37154,127+J1=PEEK(37137)+J2=PEEK(37152)+H4=PEEK(197) 101 POKEM+C+J,1+POKEM1+C+J,1+POKEM+J,4+POKEM1+J,0+0=5 102 PRINT" HER SCISC=SC-1: PRINT" COMPANY SEIPRINT" COMPANY SEIPRINT 103 POKE7683,61POKE7684,61POKE7692,61POKE7701,61POKE7683+C,41POKE7684+C,4 POKE7692+C,4:POKE7701+C,4 105 IFSC=<10THENPOKE7682,32#IFSC=0THEN800 IF(J2AND128)=00RH4=28THENG0SUB300:J*J+1:X=+1:G0T0117 1[1 IF(J1AND16)=00RH4=35THENGOSUB300+J=J-I+X=-1+G0T0117 115 IF(JIAND4)=00RH4=33THENGOSUB300:J=J-22:X=-22:GOT0117 116 IF(J1ANDB)=00RH4=26THENGOSUB300+J=J+22+X=+22+GOT0117 117 POKES,0*POKES1,0*POKE36876,0



119	IFPEEK(M1+J)=60RPEEK(M1+J)=20RPEEK(M1+J)=7THENJ=J-X1G0T090
120	IFPEEK (M+J)=60RPEEK (M+J)=20RPEEK (M+J)=7THENJ=J-X1G0T090
121	1F(JIAND32)=00RH4=36THEN400
122	IFPEEK (M+J)=10RPEEK (M+J)=00RPEEK (M1+J)=0THEN600
155	POKEM+C+J,1:POKEM1+C+J,1:POKEM+J,4:POKEM1+J,5:POKED,0:POKED1,1:POKED+C,2:POK
EO14	-C,2
166	G070100
300	POKEM+J,32:POKEM1+J,32:POKES1,200:0=3:POKES1,0:SF+5:RETURN:END
400	POKEM+J+Y,236IFORT=1T05:NEXTIPOKEM+J+Y,321Y=Y+X
402	IFPEEK(M+J+Y)#2THENPOKEM+J+Y,32:GOT085
406	IFPEEK (M+J+Y)=60RPEEK (M+J+Y)=7THEN90
407	POKEM#J,41POKEM1+J,51POKEM+C+J,11POKEM1+C+J,11SF#SF#5
408	IFY=0THEN90

410 GOTO400 600 POKE36879,2351POKE0,41POKED1,3 610 FORT=1T0700:NEXT:SD=SD+1:W=W+10:SF=SF+1000:G0T060 615 END 800 SE=SE-11POKES,0:POKES1,0:POKE36876,0:POKE36879,311FORT=1T0700:NEXT 805 IFSE -0THEN900 818 GOTO68 900 GOSU8970: PRINT ". POKE36879, 10: POKE36869, 240: POKES, 0: POKES1, 0: POKE36876, 0 SKILL LEVEL*SD 910 PRINT THREEYOU MANAGED TO REACH 915 PRINT"INTERNE"OINTS+"SF 920 PRINT " MARGANOTHER GO? Y/N. " 925 POKE198,0 930 GETA#FIFA#=*Y*THENRUN 940 IFA\$="N"THENSTOP 950 GOT09301END 970 S=36874:READP 971 IFP=-1THEN973 972 READG POKES, PIFORF=ITOGINEXTF:POKES,0:FORF=IT020:NEXTF:GOT0970 973 POKES1,01RETURN 974 END 988 DATA195,200,195,150,195,80,195,200,203,150,201,80 981 DATA201,150,195,50,195,150,195,80,195,300,-1,-1 8157 +C,1:POKE8107+C,1

BBC UTILITY

1U1

Tĉ

AA



Are you tired of adding up all those 128s, 64s, 32s, etc., when designing your characters? If so, then this program is for you.

First, type in the ASCII code of the character to be defined,

finished character is shown to the right of the grid

When satisfied, press Return and you will be told exactly what you need to type, in your programs or otherwise, to

Pos(64) pixel on or off array Para(8) parameters needed to define character Value decimal value of each bit (pixel)

How It works

80-130 instalises and calls subroutines

and the	fore/background
colours.	then you are given a
mode 2 8	x8 grid to design the
character	in
Use F	for pixel on, SPACE
for pixel	off, the cursors to
move, and	DELETE as normal define that character. define that
As you 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150	REM ####################################

160 PRINT' "Press F for pixel on"' "SPACE for pixel off"' "Use cursors and"' "DEL ETE as normal"'" "Press RETURN when"""finished" 170 PRINT 180 FDR A=1 TO B:PRINTTAB(2);STRING\$(8,CHR\$254):NEXT 190 VDU5: P%=1: X%=128: Y%=543: *FX4, 1 200 GCOL3, 14: MOVE X%, Y%: VDU255 210 GCOL 0, Back: MOVE 900, 512: VDU255: GCOL 0, Fore: MOVE 900, 512: VDU Char 220 #FX15.1 230 A=GET 240 IF A=136 AND P%>1 P%=P%-1 250 IF A=137 AND P%<64 P%=P%+1 260 IF A=138 AND P%<57 P%*P%+8 270 IF A=139 AND P%>8 P%=P%-8 280 GEOL3, 14: MOVE XX, YX: VDU255 290 X%=128+(P%-1) MOD 8*64:Y%=543-(P%-1) DIV8*32 300 IF A=70 Pos(P%)=1: MOVE X%, Y%: 5COL 0, Fore: VDU253: P%=P%+1:1F P%=65 P%=64 310 IF A=32 Pos(P%)=0:MOVE X%, Y%:GCOL 0, Back: VDU255, 8:GCOL 0, Fore: VDU254: P%=P% +1: IF P%=65 P%=64 320 IF A=127 Pos(P%)=0:MOVE X%,Y%:GCOL 0,Back:VDU255,8:GCOL 0,Fore:VDU254:P%=P %-1: IF P%=0 P%=1 330 IF A=70 DR A=32 DR A=127 PROCWORK 340 X%=128+(P%-1) MOD 8+64:Y%=543-(P%-1) DIV8+32 350 IF A=13 ENDPROC 360 GOTO 200 370 DEF PROCSET_UP 380 PRINT' "CHARACTER DESIGNER"'' "by Stephen Gray" 390 INPUT'"Character number (224-252) ".Char 400 IF Char>252 DR Char<224 THEN 390 410 INPUT' "Foreground colour (0-15) ".Fore 420 IF Fore>15 OR Fore<0 THEN 410 430 INPUT'"Background colour (0-15) ",Back 440 IF Back>15 OR Back<0 THEN 430 450 IF Fore=Back PRINT'"Same colour - you won't see anything (":GDTO 410 460 ENDPRDC 470 DEF PROCSHOW 480 GCDL 0, Fore: GCDL 0, Back+128: CLS: PRINT' "CHARACTER DESIGNER"'' "CHARACTER ";C har"""Type the following""""VDU 23,";Char: 490 PROCWORK 500 FOR A=1 TO S:PRINT", ";Para(A);:NEXT 510 PRINT*** 520 FOR A=1 TO 9:PRINTCHR\$(Char):" "::NEXT 530 #FX15 540 PRINT''' "Press RETURN"'"to restart"

1.00

11





P



R

Here's an old game adapted for a new machine! You have to be a mastermind to crack this one

G

Test your powers of logical thought with this game for your C16.

The program chooses four numbers from the range one to seven and you have just ten attempts to guess the numbers.

The program marks your attempts with a white cross for a correct number in the wrong sequence and a black cross for a correct number in the right position

If you make a mistake whilst typing in your guess it can be cancelled by simply pressing the space bar.

If anyone would like to provide us with a routine that allows the computer to guess your sequence, please do so!

Main Variables NLN2,N3,N4 numbers chosen by the machine F,F,G,H nambers chosen by the aser P1 screen disp av position P4 number of attempts W number of white crosses to be shown B number of black crosses to be shown

K detects when space bar is depressed

158 CHARI, 5,22, "PRESS ANY KEY TO PLAY" 188 FOR A-868 TO 988 STEP 28 170 SOUND3, A, 10: SOUND1, A-400, 10: NEXT 188 SOUND2,488,28 198 GETKEYA#IPRINT"J" 200 A=INT(RND(1)+7+1)+N1=A 218 A=INT(RND(1)+7+1) 220 IF A-NI THEN 218 238 NEMA 248 A-INT(RND(1)+7+1) 258 IF A=N1 OR A=N2 THEN 248 268 N3=A 278 A-INT(RND(1)+7+1) 288 IF A-NI OR A-NE OR A-NG THEN 278 298 300 POKE3173,160:POKE3176,160 318 POKE3179,160(POKE3102,168 320 P1=3973:P4=0 338 80508398 348 1F K-1 THEN GOSUB 968:8010338 356 [FB2=4THENB06087761PR]NT* __ G0T0268 368 P1=P1-88+P4=P4+1 378 IF P4418 THEN 338 GOSUBBED : PRINT " " 100T0200 388 298 IF K=1 THEN RETURN 408 418 POKEP1.22+40+E=22+60UND1,000,5 428 80608 728 438 JEK-LTHENRETURN 448 1F ZZ-E THEN 428 458 POKEP1+3,22+481F=22180UND1,808,5 455 00508 728 478 IFK+1THENRETURN 400 IF 22-C OR 22-F THEN 460 498 POKEP1+5,22+4810-22150UND1,808,5 500 G06U8 728 510 |FK=1THENRETURN IF 22-E OR 22-F OR 22-B THEN SOB 254 530 POKEP1+9,22+401H+22150UND1,000,5 548 W-018-5 558 [FE-NIORE-NOORE-NGORE-N4THENW-W+] 560 IFF +NIORF +N2ORF =N3ORF +N4THEN4=4+1 570 IFG =N10R0 =N20RG=N30RG=N4THE NH=H+1 388 1FH=N10RH=N20RH=N30RH=N4THENW+H+1 598 1FE =NITHENW=W-1/8-8+1 |FF=N2THENU=W-1+B+0+1 688 618 IFG=N3THENW=W-LIB+B+L 628 15H+N4THENH+14-118-8+L 630 82-8 640 P2+10391P3+151 [F8+0THEN680 Subroutines 650 1-P2,0:POKEP1-P3,24 720-760 receive a number from 660 B+B-1+P2+P2 3+P3+P3-3 the user 670 1F9 X0THEN650 770 850 winning rotatine 866-928 los ng routine 688 IFM-STHENPETURN 930-950 d spias our 698 POKEP1-P3,241W-W-11P3-P3-3 uniners chosen by he machine 700 [FW)OTHEN690 710 RETURN 250 GETX#! IFX#+**THEN720 730 IFX#=* "THENK=1IRETURN 748 22 = VAL (X\$) 758 LF22(10R22)7THEN728 768 K-BIRETURN 780 00SU8930 785 X*0 798 SOUND2,450,151600ND1,450,15 888 SOUND2,378,5 ISOUND1,378,5 810 SOUND2,258,5 ISDUND1,258,5 828 SOUND2,608,15:50UND1,608,15 838 X+X+L1 [FX/3THEN790 840 PRINTSPC(80)" PRESS ANY KEY" 850 GETKEYUSERETURN 668 PRINT MARD LUCK! 870 GOSUB930 888 FORA=258TOZEROSTEP 25 898 SOUNDI, A, L2:NEXT 900 SOUND1.1.30 910 PRINTSPC(00) PRESS ANY KEY" 928 GETKEYDSIRETURN 938 POKE3173, N1+48: POKE3176, N2+48 948 POKE3179,N3+48+POKE3182,N4+48 950 RETURN 960 POKEP1,32 \$POKEP1+3,32 970 POKEP1+6,32:POKEP1+9,32 980 RETURN

	How it works 10-190 set up screen, print it's ructions 200-290 choose numbers 200-290 choose numbers 200-290 choose numbers 200-290 choose numbers 200-290 choose numbers 200-290 choose numbers 330-530 receive and display the aser's choice 540-620 decide which numbers are correct 630-710 display white or black
10 PRINT J" IVOLS 10 COLOR4,8.71COLOR8,8,3:CO 20 CHARI,10,1,"N 0 W T 0 20 CHARI,2,5,"THE MACHINE & 20 CHARI,2,5,"THE MACHINE & 20 CHARI,2,6,"NUMBERS SETUE 20 CHARI,2,6,"NUMBERS SETUE 20 CHARI,2,7,"ORDER." 20 CHARI,2,8,"YOU ARE ALLOW 20 CHARI,2,10,"TRY AND SUES 20 CHARI,2,12,"A WHITE CROSS 20 CHARI,2,12,"A WHITE CROSS 20 CHARI,2,14,"A SLACK CRO	LOR1,2 P L A Y' AILL SELECT 4 DIFFERENT' EEN 1 AND 7 IN A RANDOM' LED UP TO 16 ATTEMPTS TO' IS WHAT THE NUMBERS ARE.' IS WILL BE SHOWN FOR A' IS WILL BE SHOWN FOR A' IS WILL BE SHOWN FOR A' IS FOR A RIGHT NUMBER'

SPECTRUM UTILITY

I 1290 IF 1%=46 AND t=11 THEN 1300 IF t=12 THEN ag%=1 ELS SE IF t=14 THEN ao%=1:d\$(13 t=15 THEN av%=1 ELSE IF IF t=23 THEN au%=1 PRINT"HE t = 10THEN IF ALONE!!! : RETURN Μ IF t=16 THEN aq%=1:d\$() THEN as%=1 =24300 THEN GOTO 1330 t = 17IF FRINT"IT THEN t = 18: RETURN IF t=25 THEN 270GOTO 1350340 THEN GOTO 1360t = 19320t = 20

R

GL

Δ

Ron Luxton's program enables you to light up your text in vivid yellow

In spite of an increasing use of [These should be preceded by electronic aids in today's modern office the humble felttipped pen continues to hold its own. A version filled with transparent fluorescent ink is now available to highlight important words and sentences to make them immediately noticeable amongst slabs of grey typescript. This program has been designed on this principal — to pick out in vivid yellow any characters or keywords you choose, and it should prove especially useful during program development. When the lines have been typed in and SAVEd, the subroutine can be MERGEd on to the end of any program, occupying lines 9983 to 9999. To use, simply enter "GOTO 9983'' Characters to be sought should be entered when prompted, in exactly the form you expect to find them within the program. Single-key KEY-WORDS require special entry.

"THEN", followed by the keyword, then backspace to delete the "THEN". Now enter the rest of the characters and then press "ENTER". To find any characters in quotation marks, you should type a double quotation mark where one appears in the listing. Therefore to find.

searching (in the loop from the end of line 9984 to line 9989), it jumps to the second loop (lines 9990 to 9998), where each following character (to the length of string aS) which matches each character in aS is stored in string xS. When this string matches the length of string a\$ (line 9994), it is printed out in a vivid yellow, and the control returns to the first loop to continue scarching for the rest of the program lines. If, after matching the first character in string aS, the remainder of x\$ does not match, then control returns to the point it left in the first loop and continues to print out and search As only characters and keywords with a code higher than 31 actually appear on the screen, the program is only concerned to find such characters and keywords. It will jump forward one byte when it meets codes lower than this (lines 9993 and 9988) while code 14 signifies that the next five bytes will be used to record the number before it in binary form, so the search will jump forward five bytes here (lines) 9987 and 9992). More detailed information

N

PRINT "Highlight"

you should enter:

PRINT ""Highlight""

which, with the quotation marks which appear with the INPUT request, will look like this

"PRINT ""Highlight"""

before you press ENTER.

This program works by examining each individual byte in each program line, starting at address 23755. When it meets a match for the first character in the string for which it is about the make-up of program lines can be found on page 166 of the Sinclair Spectrum manual.

D.

RI

After searching through all the listing, the program tells you how many times the characters you seek are used in the program, and in which bnes.

How It works

- 9983 zets up chars sought
- 9984 when search ends, reports number of times chars used and where
- 9985 formats line numbers
- 9986 if there is a match with first char in the string sought, goes to 9991
- 9988 limits printing to usable ASCI1 codes
- 9987, 9992 prevents use of binary numbers in lines (see Spectrum manual, chapter 24)
- 9989 moves search to next line 9990 loop to prepare string x5 9996 if each byte in PEEK m loop matches each byte in q (lines 9990 to 9995), and

therefore Len x5 = w(Len a5). then the program goes to 9997 to add to counter(z). and to ensure that a line number is not counted or printed more than once even if as is used more than once in a line. It then goes to line 9998 to BEEP, to "highhght" chars sought and returns to loop at 9991 to continue searching for any further occurrences of chars sought

Variables

- a counter for times chars used k counter for number of lines in
- which they appear # length of aS
- e code of aS for/next loop
- for/next loop
- m for/next loop x holds val of j
- aS characters sought
- x\$ characters found
- q\$ holds current line no
- as holds line numbers of where characters found
- FNn() start of text in first line
- FNb() remainder of line
- FNe() number of current line

9983 CLS : INPUT "Characters sought ? "jat: LET HT LEN at: DIM q(w): FOR i=1 TO w: LET q(i)=CODE at(i)): NEXT 1: GO 6UB 9999 9984 IF FN c()=9983 THEN PRINT : PRINT : PRINT : PAPER of BRIGHT 1; """lat: "" used ";z; (" times"" AND 2>2)+(CHR\$ 8+"twice-" AND 2=2)+(CHR\$ 8+"once only-" AND z=1)+(CHR\$ 8+"7 ; No !*" AND z=0)'("10 line " AND k=1)+("In lines " AND k>1);z#: PAPER 7: INK O: STOP * AND FN c()(10)+(* * AND F 9985 PRINT TAB OI (* N c()>=10 AND FN c()(100)+(" " AND FN c()>=100 AND FN c()(1000);FN c();; FOR J=FN a() TO FN b(); IF PEEK J=13 THEN 00 TO 9989 9986 IF PEEK 1=g(1) THEN BO BUB 9990 9987 IF PEEK J=14 THEN LET J=J+5 9998 IF PEEK 1>=32 THEN PRINT CHRS PEEK 11 9989 NEXT 5: LET s=FN b()+1: 80 TD 9984 9990 LET x=j: LET x4=**; LET t=1 9991 FOR max TO X+m-1: IF PEEK m=13 THEN RETURN 9992 IF PEEK #=14 THEN LET x+#+61 60 TO 9991 9993 IF PEEK #<32 THEN LET x=x+1: 80 TO 9991 9994 IF PEEK ang(t) THEN LET X ** ** CHR* PEEK at L ET t=t+l 9995 IF LEN X4=# THEN 80 10 9997 9996 NEXT IN IF LEN HACHN THEN RETURN 9997 LET 2-2+1: LET k-2; LET k-k-(1 AND g0-STRO FN c())) IF g8()STR# FN c() THEN LET ##=###STR# FN c()+"," 9998 BEEP .05,50: PRINT PAPER 6; BRIGHT 1:x4:: LE T g9-STR\$ (N c()) LET j=m1 80 TO 9989 9999 LET k=0: LET 2=0: LET q#="") LET z#=""! LET » =23755; DEF FN a()=s+4; DEF FN b()=s+3+PEEK (s+2)+ 256+PEEK (s+3): DEF FN c()=256+PEEK s+PEEK (s+1):

Frank PRANNEE DATASTAR INTERCEPTOR 7 56 5 50 FRANNEE TYPE DATASTAR INTERCEPTOR 7 56 5 50 FIST STAPETHAWIN 6 96 7 50 DATASTAR INTERCEPTOR 7 96 5 95 FIST STAPETHAWIN 6 96 7 50 CAU, DROM 7 98 5 95 A VIEW TO KILL 10 96 5 20 RABEM WOMTHE 9 85 7 50 DUM DARACH 9 96 7 50 CAU, DROM 7 98 5 90 CRYSTALS OF CARUS 9 96 7 50 STAPETHAWIN 9 65 7 50 CRYSTALS OF CARUS 7 00 5 50 FRANUAR TO PORE 9 85 5 25 PRESPORTS 9 96 7 50 COMBAT, VMX 9 85 5 50 COMBAT, VMX 9 95 7 50 COMBAT, VMX 8 95 5 50 FRAMIN JAC99 9 95 7 50 COMBAT, VMX 8 95 5 50 COMBAT, VMX 9 95 7 50 GOMBAT, VMX 8 95 5 50 ROCKY HO				DUN DARACH EVERYDNES A WALLY WORDENS DUEST STARIOM WRIGGLER MYERSPORTS SAIMAZODM BAGAIL BA WORLD SERIES BASEBALL BATLE FOR MICHAY	8 95 8 95 5 95 5 95 7 95 95 95 95 95 95 95 95 95	77505555555555555555555555555555555555
Phammale LL -R	COLUMN C T H	o of	1.60	DATASTAR INFERCEPTOR	7 95	5 95
Pist 0 0 5 0 <th0< th=""> 0 0 0</th0<>	THE WAY OF THE EXPLODIN	6 2	7.90	DALEY SUPER JEST	6 95	5 25
A VIEW TO KILL 10.99 8.99 ROWPER FOOLU 9.95 7.50 DIM DARACH 9.95 7.50 ARABEMA "GATS & 0.00 7.7 DIM DERS OLEST 9.95 7.50 ARABEMA "GATS & 0.00 7.7 JUMP JET 9.95 7.50 FRAREAR "GATS & 0.00 7.7 7.7 9.95 7.50 JUMP JET 9.95 7.50 FRAREAR "GATS & 0.00 7.7 9.95 7.50 JEWELS OF BARYLON 7.00 5.50 ANIMATED STRIP POKER 9.95 7.52 JEWELS OF BARYLON 7.00 5.50 ANIMATED STRIP POKER 9.95 7.52 JEWERFDORTS 9.95 7.50 COMFAT, "KX 9.95 5.22 REAL VAIX 9.95 7.50 COMFAT, "KX 9.95 5.22 REAL VAIX 9.95 7.50 COMFAT, "KX 9.95 5.25 MICH OFFICE 9.95 7.50 COMFAT, "KX 9.95 5.95 ROCK MORROR SHOW 9.95 7.50 MAR MEPH STO 7.90 4.92 MICH OFFICE 9.95 7.50 MAR MEPH STO	FIST	9.95	7 50	CAU, DRON	7 99	5 90
CLINE NO STADDWFIRE	A VIEW TO KILL	10 99	8 99	ROMPER FOON	19.95	7 50
MONDERS OLEST 6 90 5 22 ARABIAN WIGHTS 6 00 7 25 JUMP JET 9 95 7 50 50 T K Y 4 4 4 7 95 3 9 TEST CRICKET 9 96 7 50 GY40 N 9 95 7 25 3 9 LIMP JET 9 96 7 50 GY40 N 9 95 7 25 3 9 LIMP JET 9 96 7 50 GY40 N 9 95 7 25 3 9 JEWELS OF BABYLON 7 00 5 50 ANIMATED STRIP POKER 8 95 5 25 MYPERSPORTS 0 95 7 50 GY40 N 8 95 5 25 COMBAT LYNX 9 95 7 50 MORDORER SAWALTY 9 95 7 50 MIN OFFICE 5 95 7 50 MYRABOR 9 95 7 50 NERGERTS DUMMY PUN 9 95 7 50 MYRABORS 7 90 4 50 NIN OFFICE 5 95 4 75 WIZARCORE BRC) 7 90 4 50 NIN OFFICE 5 95 7 50 MYRAROS 7 95 5 95	DEN DARACH	0.94	7 50	SHACOWFIRE	9.95	7.50
JULIP JET 9 96 7 50 Test CRICKET 9 96 7 50 Great Annual State 9 95 7 25 3 96 TEST CRICKET 9 96 7 50 Great Great 9 95 7 25 3 95 7 25 3 95 7 25 3 95 7 25 3 95 7 25 3 95 7 25 3 95 7 25 3 95 7 25 3 95 7 25 3 95 5 55 3 95 5 55 3 95 5 55 3 95 5 55 3 95 5 55 3 95 5 55 3 95 5 55 3 95 5 55 3 95 5 55 3 95 5 55 3 95 5 95 4 75 3 96 5 56 3 95 5 95 4 75 3 96 5 95 4 75 3 96 5 95 4 75 3 96 5 95 4 75 3 96 5 95 4 75 3 96 5 95 4 75 3 96 7 50 3 97 3 96 7 7 96 5 95 4 75 3 97 3 97 3 97 3 97 3 97 3 97 3 97 <td>MORDENS OLEST</td> <td>6 95</td> <td>5 25</td> <td>APABLAN N'GP'S</td> <td>6 00</td> <td>7.50</td>	MORDENS OLEST	6 95	5 25	APABLAN N'GP'S	6 00	7.50
TEST CRICKET 9 98 7 50 GY40 N 9 98 7 20 CRVSTALS OF CARNS 7 00 5 50 ANIMATED STRIP POKER 6 98 5 27 JEWELS OF BARYLON 7 00 5 50 ANIMATED STRIP POKER 6 98 5 27 MYPERSPORTS 6 98 6 50 FORMULA OWE 8 98 5 27 BRAM JACS9 COMPAULYNN 8 95 6 50 FORMULA OWE 8 96 5 27 BRAM JACS9 COMPAUTON 8 95 7 50 ARABIAN NIGHTS 7 99 4 95 6 50 BRAM JACS9 COMBAT, VMX 8 95 7 50 ARABIAN NIGHTS 7 99 4 95 6 50 BRAM JACS9 TIR MA NGG 5 95 4 75 MINI OFFICE 5 95 4 75 MINI OFFICE 5 95 5 50 ARABIAN NIGHTS 7 99 4 95 5 50 MORTORON SMOW 9 95 5 50 ARABIAN NIGHTS 7 99 4 95 5 50 MORTORON SMOW 9 95 5 50 ARK AN HE BLANSTAL 9 95 5 50 MODECARESTA 6 95 5 25 AMETRAM 8 95 5 5 50 </td <td>JUMP JET</td> <td>9 95</td> <td>7.50</td> <td>TXY & & &</td> <td>7 95</td> <td>3 99</td>	JUMP JET	9 95	7.50	TXY & & &	7 95	3 99
CHARDS 1 00 3 30 ANIMATED STRIP PORER 6 35 5 30 HYPERSPORTS 8 95 6 50 FORMULA ONE 8 95 6 55 THEATRE EUROPE 9 95 7 50 COMEAT LYNX 8 95 6 55 COMBAT LYNX 8 95 6 30 IIIC/FREETMON 6 95 5 52 COMBAT LYNX 8 95 7 50 COMEAT LYNX 8 95 6 56 RORKY MARDR 9 95 7 50 ARABIAN INGMYS 7 90 4 75 MINI OFFICE 5 85 7 50 MYL ARCORE BRC) 2 95 5 96 4 77 ROCKY MORIOR SHOW 9 95 7 50 MYL ARCORE BRC) 2 95 5 98 4 78 ROCKY MORIOR SHOW 9 95 5 25 AREMARAN 7 95 5 98 4 78 ROCKY MORIOR SHOW 9 95 5 25 AREMARAN 9 95 5 98 4 78 ROCKY MORIOR SHOW 9 95 5 25 AREMARAN 9 95 5 98 MDON CHESTA 6 95 5 25 AREMARAN <td>TEST CRICKET</td> <td>9.95</td> <td>7 50</td> <td>SYNON</td> <td>9.95</td> <td>7 25</td>	TEST CRICKET	9.95	7 50	SYNON	9.95	7 25
HYPERSPORTS 9 95 6 50 FORMULA ORE 9 95 5 95 THEATRE EUROPE 9 95 7 50 COMEAT LYNX 8 95 6 50 COMBAT LYNX 9 95 7 50 COMEAT LYNX 8 95 6 50 COMBAT LYNX 9 95 7 50 ARABIAN NGMTS 7 99 4 96 HERGERTS DUMMY PUN 9 95 7 50 ARABIAN NGMTS 7 99 4 96 THE MA NOG 9 95 7 50 ARABIAN NGMTS 7 99 4 96 MIN OFFICE 9 95 7 50 MAR OFFICE 5 95 4 97 MIN OFFICE 9 95 7 50 MAR OFFICE 5 95 4 97 ROCKY MORROR SHOW 9 95 5 25 MIC RO OLYMPICS 5 96 4 97 ROCKY MORROR SHOW 9 95 5 25 AMSTAM 9 95 5 96 COMP J210M 6 95 5 25 AMSTAM 9 95 5 95 SLAP SMOT 9 95 7 50 AZIALT M 9000 9 95 5 95 SLAP SMOT DISK 1 9 95 7 50 AZIALT M 9000 9 95 5 95 SHA	JEWELS OF RABYLON	7 00	5 50	ANIMATED STRIP POKER	6.95	3 25
THEATRE EUROPE 9.95 7.50 COMEUTION 6.95 5.25 BRIAN JAC99 0.95 7.50 COMEUTION 6.95 5.25 EVERYONES A WALLY 9.95 7.50 COMEUTION 6.95 9.95 7.50 IFR MA NGG 9.95 7.50 MARDINA INGUTS 7.90 4.92 MINI OFFICE 5.95 4.75 MIR OFFICE 5.95 4.75 MINI OFFICE 5.95 4.75 MIR MEPH STU 7.95 5.95 ROCKY MORDOR SHOW 9.95 7.50 MIR MEPH STU 7.95 5.96 ROCKY MORDOR SHOW 9.95 5.25 AMETAND 7.95 5.96 4.75 MOON CRESTA 6.95 5.25 AMETAND 9.95 5.96 4.75 MOON CRESTA 6.95 5.25 AMETAND 9.95 5.96 4.77 SLAP SHOT 8.95 5.25 AMETAND 9.95 5.96 SLAP SHOT DISK 10.95 8.95 5.25 AMETAND 8.95 6.55 SLAP SHOT DISK 10.95 8.95	HYPERSPORTS	8 95	6 50	FORMULA ONE	95	5 50
BRAN JACS* CLIMBAT LYNK 0.95 6.50 BIC/FLEEYABN COMBAT LYNK 0.95 7.50 COMBAT , YNK II 95 6.55 YIR MA NG	THEATRE EUROPE	9.95	7 50	COMFUZION	6 96	5 25
CUMBAT LYA 0 95 7 50 COMBAT LYA 0 95 7 50 HERBERTS DUMMY RUN 9 95 7 50 ARABIAN RIGHTS 7 99 4 90 TIR MA NOG 0 95 7 50 MAR ORFOLE 5 95 4 75 MINI OFFICE 5 85 4 75 WIZARCORE BAC 2 95 4 75 ROCKY MORDOR SHOW 10 95 5 25 MIR MEPH STO 7 00 4 98 ROCKY MORDOR SHOW 10 95 5 25 GOREALINS 7 96 5 96 ROCKY MORDOR SHOW 10 95 5 25 GOREALINS 7 95 5 96 MDON CRESTA 6 95 5 25 GOMBAT LYNX 8 95 5 5 96 SLAP SHOT 6 95 5 25 GOMBAT LYNX 8 95 5 5 96 SLAP SHOT DISK 10 95 8 25 7 96 5 96 8 95 5 5 5 SHADOWF RE 8 95 7 50 AZINGTM 3000 6 95 5 5 5 8 95 5 5 5 SHADOWF RE 11 95 9 15 ANIMATED STAP POKER 8 95 5 5 5 SHADOWF RE <td< td=""><td>SRIAN JACS9 COMPATINNY</td><td>8.05</td><td>6.50</td><td>HOC/ELECTOR</td><td></td><td></td></td<>	SRIAN JACS9 COMPATINNY	8.05	6.50	HOC/ELECTOR		
HERGERTS DUMMY RUN 9 95 7 50 ARABIAN INGHTS 7 90 4 90 TIR MA NGG 9 95 7 50 M'MI OFFICE 5 95 4 70 MINI OFFICE 5 85 4 75 M'MI OFFICE 5 95 4 70 MINI OFFICE 5 85 4 75 M'MI OFFICE 5 95 4 70 ROCKY HORRON SHOW 9 95 7 50 M'MI OFFICE 5 95 4 70 ROCKY HORRON SHOW 9 95 6 50 MR MEPH STO 7 00 4 96 ROCKY HORRON SHOW 9 95 5 25 MIR MEPH STO 7 00 4 96 ROCKY HORRON SHOW 12 95 8 75 6 50 17 95 5 95 17 95 AZIM JTH 3000 8 95 5 25 Amstrand 9 95 5 95 14 70 17 95 5 95 SLAP SNOT 015X 10 95 8 25 COMPUZION 6 95 5 25 Amstrand 6 95 5 25 SHADOWF RE 9 95 7 50 AZIMUTH 3000 6 95 5 25 0 85 5 95 5 95 5 95 17 90 17 95 17 90 17 90 18 95	EVERYONES & WALLY	9 95	7 50	COMBAT . YNX	11.95	8 50
THE MAIN OG 9 05 7 50 Mix COPICE 9 05 5 05 MINI OFFICE 5 85 4 75 MIX COPICE 9 05 5 05 MINI OFFICE 5 85 4 75 MIX COPICE 9 05 5 05 ROCKY HORRON SNOW 9 05 6 50 MIX ROPICS 5 95 4 77 ROCKY HORRON SNOW 12 95 8 79 BP AM, ACKS 7 95 5 95 MOON CRESTA 6 95 5 25 AMETAD 7 95 5 95 CONFUZION 6 95 5 25 AMETAD 9 95 5 05 SLAP SHOT DISK 10 85 8 25 CONFUZION 6 95 5 25 SLAP SHOT DISK 10 85 8 25 CONFUZION 6 95 5 25 SLAP SHOT DISK 10 85 8 25 CONFUZION 6 95 5 25 SLAP SHOT DISK 10 85 8 25 CONFUZION 6 95 5 25 SLAP SHOT DISK 10 85 8 25 CONFUZION 8 95 5 5 0 SHADOWF RE DISK 9 95 7 50 AZIMILAT BODO 8 95 5 95 STREET NAWK<	HERGERTS DUMMY RUN	9 95	7 50	ARABIAN NIGHTS	1 98	4 90
Mill OPPLOE 5 85 6 56 MIR MEPH STO 7 00 4 98 ROCKY HORROR SHOW 12 95 6 79 HP AM JACKS 7 95 5 96 4 77 ROCKY HORROR SHOW 6 95 5 25 ANDERTAS 7 95 5 96 4 98 ROCKY HORROR SHOW 6 95 5 25 ANEXTAG 7 95 5 96 4 98 ROCKY HORROR SHOW 6 95 5 25 COMBAT_LYMX 8 95 5 96 4 98 ROCKY HORROR SHOW 6 95 5 25 ANEXTAG 9 55 5 96 4 98 ROCKY HORROR SHOW 6 95 5 25 ANEXTAG 9 5 5 96 5 96 5 96 SLAP SHOT DISK 10 85 9 95 7 50 AACK & THE BEANSTALK 8 95 6 5 5 SHADOWF ARE DISK 13 95 9 75 AACK & THE BEANSTALK 8 95 6 5 5 SHADOWF ARE DISK 13 95 9 75 AACK & THE BEANSTALK 8 95 6 5 5 STRARGELOWF ATEST 7 95 5 95 AALINATED STARP POKER 8 95 6 5 5 STRARGELOOP 8 95 5 95 AALINATERSTAR 7 95 </td <td>TIR MA NOG</td> <td>9.95</td> <td>7 50</td> <td>WIZARCORE BOC)</td> <td>2 96</td> <td>5 95</td>	TIR MA NOG	9.95	7 50	WIZARCORE BOC)	2 96	5 95
NOCKY MORADA SMOW 12.96 a.73 BP AM JACKS 5.96 4.74 (DISC) 12.96 a.73 BP AM JACKS 7.96 5.96 AZIM_TH 3000 0.95 5.25 GEREM, INS 7.96 5.96 MOON CRESTA 6.95 5.25 AMETANE 9.95 5.96 CONFUZION 6.95 5.25 COMBAT, YNX 9.95 5.5 SLAP SHOT 8.95 5.525 COMBAT, YNX 9.95 5.5 SLAP SHOT 8.95 5.525 COMBAT, YNX 9.95 5.5 SLAP SHOT 8.95 6.55 CONFUZION 9.95 5.5 SLAP SHOT 8.95 7.50 ARIMIT AND 9.95 5.5 SHADOWF RE 9.85 7.50 ARIMUT AND 8.95 6.55 JSW III 9.95 9.53 ARIMUT AND 8.95 6.55 JSW III 9.95 9.95 5.95 ARIMUT AND 8.95 6.55 JSW III 9.95 5.95 ARIM SOLEY AND 8.95 <td< td=""><td>ROCKY HORBOR SHOW</td><td>1 95</td><td>5 50</td><td>MR MEPH STO</td><td>7 00</td><td>4 93</td></td<>	ROCKY HORBOR SHOW	1 95	5 50	MR MEPH STO	7 00	4 93
(DISC) 12.96 0.75 0.75 0.75 0.75 0.75 0.75 0.76 5.95 AZIMUTH 3000 0.95 5.25 AmetTAM 0.95 5.25 AmetTAM 0.95 5.95 SLAP SHOT 0.95 5.25 AmetTAM 0.95 5.25 AmetTAM 0.95 5.55 SLAP SHOT 01SK 0.95 5.25 COMENTAN 0.95 5.55 SHADOWF RE 0.95 7.50 AZIMUTH 3000 0.95 5.55 SHADOWF RE DISK 13.95 9.75 AXIMATED STAP MODO 0.95 6.55 SHADOWF RE DISK 13.95 9.75 AXIMATED STAP MODO 0.95 6.55 SHADOWF RE DISK 13.95 9.75 AXIMATED STAP MODO 0.95 6.55 SHADOWF RE DISK 13.95 9.55 9.55 AZIMUTH 3000 0.95 6.55 SHADOWF RE DISK 13.95 9.95 3.05 SUPERT TAR 7.96 5.95 STREET MAWK 7.95 5.95 3.05 TANKBUSTERS 7.95 5.95 WDRLD SERIES BASEBALL <td< td=""><td>ROCKY HORROR SHOW</td><td></td><td></td><td>MICRO OLYMPICS</td><td>5 95</td><td>4 75</td></td<>	ROCKY HORROR SHOW			MICRO OLYMPICS	5 95	4 75
MDON CRESTA 6 95 5 25 MDON CRESTA 6 95 5 25 CONFUZION 6 95 5 25 SLAP SHOT 8 95 5 50 SLAP SHOT 8 95 5 50 SLAP SHOT 8 95 5 50 SLAP SHOT 8 95 6 55 SLAP SHOT 8 95 6 55 SLAP SHOT 8 95 7 50 SHADOWF RE 9 95 7 50 JET SET WILLY 8 95 6 55 SHADOWF RE DISK 13 95 6 50 JET SET WILLY 8 95 6 55 SK W II 8 95 6 50 JET SET WILLY 8 95 6 55 STREET HAWK 7 95 5 95 JARKSTAR 7 95 5 95 STREET HAWK 7 95 5 95 JARKSTAR 7 95 5 95 WORLD SERIES BASEBALL 7 95 5 95 JALL INTERCEPTOR 6 00 4 35 GATES OF DAWN 8 95 6 50 GEATES OF DAWN 8 95 6 50 MADDER OF THE WATERFRONT 9 95 5 90 JAL WATER SINCAVE 5 95 <tr< td=""><td>(DISC)</td><td>12.95</td><td>8 75</td><td>GREM, INS</td><td>7 95</td><td>5 95</td></tr<>	(DISC)	12.95	8 75	GREM, INS	7 95	5 95
CONFUZION 6 95 5 25 COMBAT_YEX 95 6 55 SLAP SHOT 8 95 5 50 JACK & THE BEANSTALK 8 95 6 55 SLAP SHOT 8 95 6 55 CONFUZION 6 95 6 55 SLAP SHOT 8 95 6 55 CONFUZION 6 95 6 55 SLAP SHOT 9 95 7 50 JET YAW 3000 6 95 6 55 SHADOWF RE DISK 13 95 9 75 JET SET WILLY 8 95 6 55 J SW II 8 95 6 50 SUPERMENT 7 95 5 95 DARKSTAR 7 95 5 95 STREET HAWK 7 95 5 95 DARKSTAR 7 95 5 95 DARKSTAR 7 95 5 95 WORLD SERIES BASEBALL 7 95 5 95 ALL INTERCEPTOR 6 00 4 35 GATES OF DAWA 8 95 6 50 CALEY THOMPSONS 8 95 6 50 GATES OF DAWA 8 95 5 96 ALL INTERCEPTOR 8 95 6 50 GATES OF DAWA 8 95 5 96 ALL INTERCEPTOR 8 95 5 5 NUADER OF AKBAR <	MOON CRESTA	6 95	5 25	A CONTRACTOR OF THE OWNER OWNE		
SLAP SMOT 8 95 5 50 JACR & THE BEAMSTALK 8 95 6 5 52 SLAP SHOT DISK 10 85 8 25 CONFUZIOM 6 95 5 2 2 SHADOWFIRE 9 85 7 50 AZIMUTIM 2000 6 95 6 5 5 SHADOWFIRE 9 85 7 50 AZIMUTIM 2000 6 95 6 5 5 SHADOWF RE DISK 13 95 9 57 ANIMATED STRIP PORER 8 95 6 5 5 JACR STREET 9 95 7 50 JET SET WILLY 6 95 6 5 5 JACR STREET 9 95 5 95 ALLIYS SUPER TEST 7 95 5 95 ALLINTERCETTOR 6 95 5 95 STREET HAWN 7 95 5 95 ALLINTERCETTOR 6 00 4 5 5 2 GHETTOBLASTER 8 95 6 50 TANK80/STERS 7 95 5 95 CAULIN 7 95 5 95 ALLINTERCETTOR 6 00 4 5 5 5 CAULIN 7 95 5 95 ALLINTERCETTOR 6 00 4 5 5 5 CAULIN 7 95 5 95 ALLINTERCETTOR 6 00 4 5 5 5 GATES OF OAWAN 9 95 5 9	CONFUZION	6 95	5 25	COMPAT . YES	1.95	6 5
SLAP SNOT DISA 10 85 8 23 CONFUZ:OM 6 95 5 2 SHADOWF RE D 85 7 50 AZIAUTH 3000 6 95 6 5 SHADOWF RE DISK 13 95 9 75 ANIMATED STAPP POKER 8 95 6 5 J SW II D 95 7 50 JET SET WILLY 8 95 6 55 J SW II D 95 7 95 5 95 DALEYS SUPER TEST 7 95 5 95 STREET HAWK 7 95 5 95 JL INTERCEPTOR 6 95 5 9 STREET HAWK 7 95 5 95 JL INTERCEPTOR 6 95 5 9 WDRLD SERIES BASEBALL 7 95 5 95 ALL INTERCEPTOR 6 00 4 5 CAULM 7 99 5 99 DALEY THOMPSONS 6 00 4 5 STRAES OF DAWN B 95 6 50 REMUSTERS CAVE 5 95 5 5 STRANGELOOP B 95 5 99 MURDER COLF 8 95 5 5 MURDER ON THE WATERFRONT A 50 6 50 GPEM_N RS 9 95 5 5 SKULL ISLAND 9 95 5 99 HANDICAPER CAVE 5 95 <td< td=""><td>SLAP SHOT</td><td>8 95</td><td>5 50</td><td>JACK & THE BEANSTALK</td><td>8 95</td><td>6.5</td></td<>	SLAP SHOT	8 95	5 50	JACK & THE BEANSTALK	8 95	6.5
SHADOWF RE DISK 1395 135 AZIMOTH 3000 6 95 6 95 6 95 SHADOWF RE DISK 1395 9 95 7 50 LET SET WOLLY 8 95 6 55 J S W II II 95 8 50 SUPER TEST 7 95 5 95 DARKSTAR 7 95 5 95 DALEYS SUPER TEST 7 95 5 95 30 STARET WOLLY 8 95 6 55 STREET HAWK 7 95 5 95 30 STAR STRIKE 6 95 5 95 GHETTOBLASTER 8 95 6 50 TAMKBUSTERS 7 95 5 95 WDRLD SERIES BASEBALL 7 95 5 95 ALL HATERCEPTOR 6 00 4 5 CAULMIT 7 95 5 95 ALL HATERCEPTOR 6 00 4 5 STRANGELOOP 8 95 6 50 GRENTION 8 95 6 50 GATES OF DAWN 9 95 5 99 OALEY THOMPSONS 9 95 5 95 STRANGELOOP 8 95 5 90 KOMER N 8 95 6 50 GATES OF DAWN 9 95 5 99 HANDICAP GOLF 8 95 5 50 SKULL ISLAND 9 95	SLAP SHOT DISK	10.85	2 50	CONFUZION	6 95	\$ 2
9 95 7 50 JET SET WILLY 8 95 6 50 J S W II 8 95 8 50 SURFERY 8 95 6 50 DALEYS SUPER TEST 7 95 5 95 DARKSTAR 7 95 5 95 STREET HAWN 7 95 5 95 DARKSTAR 7 95 5 95 STREET HAWN 7 95 5 95 30 STAR STRIKE 6 95 5 2 GHETTOBLASTER 8 95 6 50 TANKBUSTERS 7 95 5 95 WDRLD SERIES BASEBALL 7 95 5 95 DALL WITERCEPTOR 6 00 4 5 CAULENT 7 95 5 95 DALL HATTRECEPTOR 6 00 4 5 CAULENT 7 95 5 95 DALL HATTRECEPTOR 6 00 4 5 CAULENT 9 95 5 96 DALL HATTRECEPTOR 6 00 4 5 GATES OF DAWN 8 95 6 50 ROMEN NS 8 95 5 5 GATES OF DAWN 8 95 5 96 KONG N 8 95 5 5 MURDER ON THE WATEAFRONT 8 95 5 96 HANDICAP GOLF 8 95 5 5 SKULL ISLAND 9	SHADOWF RE DISK	13 95	9 75	AZIMUTH 3000 ANIMATED CTOP POREI	1 95	6.5
J. S. W. II III. S5 8.50 SUPER TEST 7.95 5.95 DALEYS SUPER TEST 7.95 5.95 DARKSTAR 7.95 5.95 STREET HAWK 7.95 5.95 DARKSTAR 7.95 5.95 GHETTOBLASTER 8.95 6.50 DALEY THOMPSONS 7.95 5.95 WDRLD SERIES BASEBALL 7.95 5.95 ALL INTERCEPTOR 6.00 4.5 CAULEN 7.95 5.95 ALL INTERCEPTOR 6.00 4.5 STRANGELOOP 8.95 6.50 OECATINION 8.95 6.53 GATES OF DAWN 8.95 6.50 OECATINION 8.95 6.53 GATES OF DAWN 8.95 5.99 DALEY THOMPSONS 8.95 5.33 MURDER ON THE WATERFRONT 8.96 5.99 KOMB R 8.95 5.33 MURDER ON THE WATERFRONT 9.95 5.99 HANDICAP GOLF 8.95 5.33 SKULL ISLAND 9.95 5.99 HANDICAP GOLF 8.95 5.50 SKULL ISLAND 9.95 5.99 HANDICAP GOLF 8.95 5.50 SKILL ISLAND 9.95 5.99 HANDICAP GOLF 8.95 5.50 NODES OF YEDAS 8.95 7.50 <td></td> <td>9 95</td> <td>7 50</td> <td>JET SET WILLY</td> <td>8 95</td> <td>65</td>		9 95	7 50	JET SET WILLY	8 95	65
DALEYS SUPER TEST 7.95 5.95 DARXSTAR 7.96 5.95 STREET HAWK 7.95 5.95 30.5TAR STRIKE 6.95 5.2 GNETTOBLASTER 8.95 5.96 TANK6USTERS 7.96 5.9 WDRLD SERIES BASEBALL 7.95 5.96 ALL INTERCEPTOR 6.00 4.5 CAULEN 7.95 5.96 ALL INTERCEPTOR 6.00 4.5 CAULEN 7.95 5.96 OALEY THOMPSONS 8.95 6.5 GATES OF DAWN 8.95 6.50 GEATINION 8.95 6.5 GATES OF DAWN 8.95 6.50 GREN, NS 9.95 5.90 MURDER ON THE WATERFRONT 8.95 5.90 MANDICAP GOLF 8.95 5.50 ITHE SCROLL OF AKBAR 9.95 5.90 MANDICAP GOLF 8.95 5.55 SKULL ISLAND 9.95 5.90 MANDICAP GOLF 8.95 5.55 SKULL ISLAND 9.95 5.90 MANDICAP GOLF 8.95 5.55 SKULL ISLAND 9.95 7.90 5.90 MALL PROFES INCAVE 8.95	5 S W II	1 95	8.50	SURCERV	8.95	6.5
GHET TOBLASTER 6 95 6 50 30 5 14H STHRE 6 95 5 2 WDRLD SERIES BASEBALL 7 95 5 95 ALL WITERCEPTOR 6 00 4 5 CAULD 7 95 5 95 ALL WITERCEPTOR 6 00 4 5 STRANGELOOP 8 95 6 50 OALEY THOMPSONS 8 95 6 53 STRANGELOOP 8 95 6 50 OECATNLON 8 95 6 53 GATES OF DAWN 8 95 6 50 GEATNLON 8 95 5 35 MUADER ON THE WATERFRONT 8 95 5 90 HANDICAP GOLF 5 95 5 0 (TALK E5) 9 95 5 90 HANDICAP GOLF 5 95 5 0 THE SCROLL OF AKBAR 9 95 5 90 HANDICAP GOLF 5 95 5 0 THE SCROLL OF AKBAR 9 95 5 90 HANDICAP GOLF 6 95 5 5 SELECT 1 11 95 7 00 SEND HELD STERS MEL 206 F 100 10 10 SEND OF YEDAS 8 95 7 50 SEND HELD STERS MEL 206 FAP 101 35 101 35 MODES OF YEDAS 8 95 7 50 INA STERS MEL 206 FAP	STREET HAWK	7 95	5.95	DARKSTAR	7 95	5 8
WDRLD SERIES BASEBALL 7.95 5.95 ALL INTERCEPTOR 6.00 4.5 CAULINE 7.99 5.99 DALEY THOMPSONS 0.4 5.00 4.5 STRANGELOOP 8.95 6.50 DECATINION 8.95 6.53 GATES OF DAWN 8.95 6.50 DECATINION 8.95 6.53 GATES OF DAWN 8.95 6.50 ROMG R 8.95 5.53 MUADER ON THE WATERFRONT 8.95 5.99 HANDICAP GOLF 8.95 5.95 (TALK ES) 9.95 5.99 HANDICAP GOLF 8.95 5.55 SKULL ISLAND 9.95 5.99 HANDICAP GOLF 8.95 5.55 THE SCROLL OF AKBAR 9.95 5.99 HANDICAP GOLF 8.95 5.55 THE LOST CITY 9.95 5.99 ALL PROFES INC.44 4.95 4.95 4.95 NODES OF YEDAS 8.96 7.50 SENO MERES ANG SUBMERES 4.95 4.95 FRANKIE G T N 9.95 7.50 SENO MERES ANG SUBMERES 4.14 PROES INC.444 4.445 A VIEW TO KILL 10.99	GHETTOBLASTER	8 95	6 50	TANKALISTERS	7 95	59
CAULEN 7.99 5.99 5.99 0.4. EY THOMPSONS STRANGELOOP 8.95 6.50 0.6. EY THOMPSONS GATES OF DAWN 8.95 6.50 0.6. EY THOMPSONS ELIDON 8.95 6.50 0.6. EY THOMPSONS MURDER ON THE WATERFRONT 8.95 5.90 KONG R 8.95 5.50 MURDER ON THE WATERFRONT 9.95 5.90 A.SM. GGLER'S CAVE 5.95 5.00 (TALK ES) 9.95 5.90 HANDICAP GOLF 8.95 5.50 THE SCROLL OF AKBAR 9.95 5.90 MALL PROFESTING, 4.0 4.0 KNAN 9.95 5.90 MALL PROFESTING, 4.0 4.0 THE SCROLL OF AKBAR 9.95 5.90 MALL PROFESTING, 4.0 4.0 KNAN 9.95 5.90 MALL PROFESTING, 4.0 4.0 SELECT 1 11.95 100 5.600 5.600 5.600 NODES OF YEDAS 8.95 7.50 5.600 6.600 6.600 FRANKIE 6 T.N 9.95 7.50 5.600 4.1 7.74 KPECTINUM 9.9	WORLD SERIES BASEBALL	7.95	5 85	ALL INTERCEPTOR	6 00	4 5
GATES OF OAWN II 95 6 50 OECATINION II 95 6 50 GATES OF OAWN II 95 6 50 KONG R II 95 8 95 5 50 MUADER ON THE WATERFRONT II 96 9 95 5 90 KONG R II 9 95 5 00 MUADER ON THE WATERFRONT II 95 9 95 5 90 A SM GGLER'S CAVE 5 95 5 0 MUADER ON THE WATERFRONT II 96 9 95 5 90 A SM GGLER'S CAVE 5 95 5 0 MANDICAP GOLF B 95 5 90 MANDICAP GOLF B 95 5 5 THE SCROLL OF AKBAR 9 95 5 90 MANDICAP GOLF B 95 5 5 THE LOST CITY 9 95 5 90 MANDICAP GOLF A 50 A 50 SELECT 1 11 95 7 00 SENO MELLES P. A 50 A 50 NODES OF YEDAS II 95 7 50 SENO MELLES P. A 100 42450 A 10 42450 FRANKIE G T N 9 95 7 50 III 10 90 B 90 A 11 PRCES PLE A 11 PRCES PLE SPY VS SPY 9 95 7 50 Devroates entered and 21 51 51 20 50 50 <t< td=""><td>STRANCE COP</td><td>/ 99</td><td>5 99</td><td>DALEY THOMPSONS</td><td></td><td></td></t<>	STRANCE COP	/ 99	5 99	DALEY THOMPSONS		
ELEDON 0.05 6.50 GPENL NS 9.05 7.5 MUADER ON THE WATERFRONT 9.95 5.90 A.SM. GGLER'S CAVE 5.95 5.00 MUADER ON THE WATERFRONT 9.95 5.90 A.SM. GGLER'S CAVE 5.95 5.00 SKULL ISLAND 9.95 5.90 HANDICAP GOLF 8.95 5.5 THE SCROLL OF AKBAR 9.95 5.99 A.L. PRICES INC. U. AP A.L. PRICES INC. U. AP NAN 9.95 5.99 A.L. PRICES INC. U. AP A.S. PRICES INC. U. AP NAN 9.95 5.99 A.L. PRICES INC. U. AP SELECT 1 11.95 7.00 SENO MELLES P NODES OF YEDAS 8.96 7.50 SENO MELLES P RANKIE G T N 9.95 7.50 INTE 8: ANA SET 205 A'VIEW TO KILL 10.90 8.99 ALL PRICES INC. 205 SPY VS SPV 9.95 7.50	GATES OF DAWN	1 95	6 50	OFCATING D	8 35	5 9
MUADER ON THE WATERFRONT A SM GGLER'S CAVE 5.95 5.00 (TALK E5) 9.95 5.99 HANDICAP GOLF 5.95 5.0 SKULL ISLAND 9.95 5.99 HANDICAP GOLF 5.95 5.5 THE SCROLL OF AKBAR 9.95 5.99 ALL PROFESTINGLY 6.9 NNAN 9.95 5.99 ALL PROFESTINGLY 6.9 THE LOST CITY 9.95 5.99 ALL PROFESTINGLY 6.9 SELECT 1 11.95 7.00 5.00 5.00 5.00 NODES OF YEDAS 8.95 7.50 5.00 5.00 60000077E -CA FRANKIE G T N 9.95 7.50 5.00 4.1 10.90 8.99 A' VIEW TO KILL 10.90 8.99 ALL PRICES PROFES AND BEE AND C1.97 9.7 SPY VS SPV 9.95 7.50 Diversals enders welcame place and C1.97 9.7	ELIDON	E 85	6 50	GREAL NS	9 95	25
(*ALK ES) // 9 95 5 90 MAINDICAP GOLF 8 95 5 5 SKULL ISLAND /// 9 95 5 90 ALK PROFES INEA(4) 64 THE SCROLL OF AKBAR 9 95 5 90 ALK PROFES INEA(4) 64 NHAN 9 95 5 90 ALK PROFES INEA(4) 64 THE LOST CITY 9 95 5 90 ALK PROFES INEA(4) 64 SELECT 1 11 95 7 00 SENO MERCES P." 60000077E - NODES OF YEDAS 8.95 7 50 SENO MERCES P." 60000077E - - FRANKIE 6 T N 9 95 7 50 1712 9: -404 4245) - - - A' VIEW TO KILL 10 90 8 90 ALK PRICES INC, JOE PAP - - - SPY VS SPY 9 95 7 50 Diversals enders welcame place and \$1 57 20 57 20 - - -	MURDER ON THE WATERFRO	INT .	6.00	A SM GGLER'S CAVE	5 95	50
THE SCROLL OF AKBAR 9 85 5 99 ALL PROFESTIBLE, U. & P KNAN 9 85 5 99 PI ALL PROFESTIBLE, U. & P THE LOST CITY 9 95 5 99 AP SELECT 1 11 95 7 00 SENO MELLES P NODES OF YEDAS 8.35 7 50 SENO MELLES P FRANKIE G T N 9 95 7 50 1714 8: -304 42455 A'VIEW TO KILL 10 98 8 98 ALL PROES INC. (DE PAP SPY VS SPY 9 95 7 50 Destructs proces and C1 57 27 27 57	(TALK EQ) / . SKULL ISLAND	9.95	5.00	HANDICAP GOLF	5 95	5.5
KNAN 9 85 5 99 P1 A_5 N F Y E A56 F THE LOST CITY 9 95 5 99 S F A R S Y E A56 F SELECT 1 11 95 7 00 S F A R S Y E S F A R S Y E NODES OF YEDAS 8.95 7 50 S F A R S Y E S F A R S Y E KPECTNUM Image: S F Y E S F A R S Y E S F A R S Y E S F A R S Y E FRANKIE G T N 9 95 7 50 Image: S F Y E S F A R S Y E S F A R S Y E S F A R S Y E S F A R S Y E S F A R S F	THE SCROLL OF AKBAR	4 99		ALL PROFES INCLUS	6.P	
THE LOST CITY 9.56 5.59 0.0	KHAN	9 85	5 99	PI ASE PT	4 9-0-4 P	
NODES OF YEDAS 8.95 7.50 SENO ME LES P INDDES OF YEDAS 8.95 7.50 SENO ME LES P IPECTRUM IPECTRUM <td>THE LOST CITY</td> <td>11 06</td> <td>2.99</td> <td>V 8 8 4 8 9</td> <td></td> <td></td>	THE LOST CITY	11 06	2.99	V 8 8 4 8 9		
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MINI OFFICE	5 95	4.75	WIZARCORE BOC)	7 96	5.90
BOCKY HORBOR SHOW	1 95	5 50	MR MEPH STO	7.00	4 90
ROCKY HORROR SNOW			MICRO OLYMPICS	5.95	4 75
(DISE)	12.95	8.75	BP AM JACKS	7.95	5 96
A21M TH 3000	8 95	5 50	GREMLINS	7.95	5 95
MOON CRESTA	6 95	5 25	100778-00		
CONFUZION	6 95	5 25	COMPLE NET	0.05	E 51
SI AP SHOT	8 95	5 50	ACK B THE REAMETL. M	9.05	E 54
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SHADOWEIRE	B 85	7 50	A TINKET M SOOD	4 05	6.5
SHADOWF BE DISK	13 95	9.75	ARIESTED CTOR DOFFE	1 05	6.5
	9 95	7.50	ANIMA EL STAR PURCH	1 05	2.5
	1 55	8.50	AUDUCION DE CONTRA	1 05	6.4
DAY FYS SUPER TEST	7 95	5.95	DADYE TAD	7 04	2.0
STREET HAWK	7 95	5.95	SO STID STOLES		189
GHETTORI ASTER	8 95	6 50	JU S'AN S'NILE	7 06	5 0
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THE SCROLL OF AVRAG	4.00	~ ~~	ALL PROFES INCLUS	8.P	
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	-				-



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ine your own Villiam Lawrie
Variables
is ly hold x.y co-ordinates for
ci,cy hold x,y co-ordinates for
e0,b0 hold x,y co-ordinates for
a1,b1 hold x,y co-ordinates for
innes down mode 1 22,52 hold x,y co-ordinates for anes down mode 2 row,1 subscripts of arrays

R

REM ** CHARACTER GRID ** Z REM ## WILLIAM LAWRIE ## 3 REM ++ 15, JURA STREET ++ 4 REM ## NORTH MUIRTON ## 5 REM ++ PERTH, SCOTLAND ++ 9 KEY 130, "run"+CHR\$(13) 10 DIM 1x(4,25),1y(4,25),a0(4,20),b0(4,20),a1(4,40),b1(4,46),a2(4,60),b2(4,60);a \$="123456789#" 28 REM ## prints MENU ## 30 MODE 1: BORDER 14: INK 1,1: INK 8,25 40 LOCATE 19,3: PRINT"REM: " 50 LOCATE 7,5:PRINT*(Press STDP on Numeric Pad)* 60 LOCATE 7,7:PRINT"(for ERUN] and for [MENU])" 78 LOCATE 9,11:PRINT**** CHARACTER BRID **** 88 LOCATE 5,15:PRINT" (Press Key 8 - 1 - 2 for Mode)" 90 25-1NKEY\$1 IF 25-"0"THEN 100 ELSE IF 28-"1"THEN 260 ELSE IF 28-"2"THEN 420 ELS E 70 100 MDDE 0:605UB 578 118 REM ** plots points for lines down ** 448 FOR 1-1 TO 68 128 FOR 1=1 TO 28 458 a2(2,1) =cx(2) + (cx(3) -cx(2)) +i/88 130 m0(2,1)=cx(2)+(cx(3)-cx(2))+1/20 460 b2(2,1)=cy(2)+(cy(3)-cy(2))=1/80 140 b0(2,1)=cy(2)+(cy(3)-cy(2))+1/20 478 NEXT 150 NEXT 488 FOR 1=1 TO 80 160 FOR 1=1 TO 28 498 a2(4,1)=cx(1)+(cx(4)-cx(1))+1/90 178 a8(4,1)=cx(1)+(cx(4)=cx(1))+1/28 508 62(4,1)=cy(1)+(cy(4)-cy(1))+1/80 100 bB(4,1)=cy(1)+(cy(4)-cy(1))+1/20 510 NEXT 178 NEXT 528 REM ** draws lines down ** 200 REM ** draws lines down ** 538 row=Z:FOR i=1 TO BB:PLOT a2(row,i),b2(row,i) 210 YOM =2:FOR 1=1 TO 20:PLOT #0(row,1),b0(row,1) 548 DRAW a2(row+2,1),52(row+2,1):NEXT 220 DRAW #0(row+2,1),b0(row+2,1):NEXT 550 REM ++ prints numbers + transparent mode ++ 238 REM we prints numbers + transparent mode ** 568 PRINT ##+##+##+##+##+##+##+##+##;CHR#(22)+CHR#(1) 240 PRINT ##+##;CHR#(22)+CHR#(1) 576 LOCATE 1,24.END 250 LOCATE 1,24:END 500 REM ** plots and draws rectangle ** 268 MODE 1: BOSUB 379 590 FOR 1=1 TO 4:READ cx(1),cy(1):NEXT 270 REM ++ plots points for lines down ++ 608 DATA 8,399,8,8,639,8,639,399 288 FOR 1+1 TO 48 618 PLOT CK(4),CY(4) 298 a1(2,1)=cx(2)+(cx(3)-cx(2))+1/48 628 FOR 1=1 TO 4:DRAW CH(1), EY(1):NEXT 300 b1(2,1)=cy(2)+(cy(3)-cy(2))+1/40 638 REM ** plots points for lines across ** 310 NEXT 648 FOR 1=1 TO 25 328 FOR 1=1 TO 48 650 1x(1,i)=cx(1)+(cx(2)-cx(1))+i/25 330 a1(4,1)=cx(1)+(cx(4)-cx(1))+1/40 668 1y(1,i)=cy(1)+(cy(2)-cy(1))+i/25 348 b1(4,1)=cy(1)+(cy(4)-cy(1))+1/48 678 NEXT 358 NEXT 689 FOR 1-1 TD 25 368 REM ++ draws lines down ++ 690 1x (3,1)=cx (4) + (cx (3)-cx (4))+1/25 376 row =2:FOR i=1 TO 40:PLOT al(row,i),b1(row,i) 708 1y(3,i)=cy(4)+(cy(3)-cy(4))+i/25 388 DRAN a1(row+2,1),b1(row+2,1):NEXT 399 REM ++ prints numbers + transparent eode ++ 718 NEXT 726 REM ++ draws lines across ++ 400 PRINT ##+##+##; CHR#(22)+CHR#(1) 738 row=1:FOR i=1 TO 25:PLOT 1:(row,i),ly(row,i) 418 LOCATE 1,24:END 748 DRAW 1x (row+2,1), 1y (row+2,1) LNEXT 428 MODE 2:805UB 599 438 REM ** plots points for lines down ** 750 RETURN

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COMMODORE 64 GAME

Simon Eyre Introduces you to Mr B, in the first of his adventures

G

Welcome to the mysterious world of Mr Benney. My name is Simon Eyre and I live in the steel city of Sheffield. I am 15 years of age and hoping to make a career out of computing after flying helicopters in the RAF. Thinking of ideas for chapters of Mr Benney is very hard so I would love to hear from all you Benney fans. Send your ideas to me via HCW.

Once upon a time in the peaceful world of the C64 cassette port lived a wonderful httle chap called Mr Benney. He was very smart and wore a suit and a bowler hat in true British fashion. He was very ambitious and wanted to do all sorts of things. Mr B, as he is known to his friends, shares his home



with great stars such as Monty Mole, Miner Willy, Wally Week and many more

Unfortunately they all laughed at Mr B because they were all big and famous, but Mr B had only ever appeared in his balloon in the manual.

Mr B was tired and fed up with all this torment, and so one day, while he was flying around in his balloon, he decided to jump and get away from everything.

He didn't want to die, so he put on his parachute first. He iooked down to the ground below and saw cars moving along a road. "That'll be safe to land on," he thought. He braced humself as he prepared for the user to press the space bar, when he would jump and be free.

М

The blistering winds blew from either side, bouncing his balloon from side to side. His heart pounded faster and faster and sweat broke to the surface.

The soothing hum of the engines hummed pleasantly as the user slowly reached out toward the spacebar... closer... closer...

Use A to guide Mr B left, and L to guide Mr B right. Press spacebar to jump, but time it perfectly.

	5 DIMRA(3):L=3:PDKE650,255	
	10 V=53248:51=53280:52=53281:5=54272:605085080	
	15 FURI=110100:K=IN1(KND(1)#6000)+1104 17 K=INT(DND(1)#600)+1104	- 11
	10 K=INI(KNU(I)#800/7110411FFEEK(K/K/\/3216E010	
and the second sec	17 FUKEK,401FUKEKTD4272,11NEAT	
	20 FURIESTUZ:RH(1)=RH(1)74:FUREV74;0 70 TEDA(1)\05ETUENDA(1)=TNT(DND(1)=75)+1	
400x4	AN NEXT	۱ I
	50 POMERAL 25-POMERA 19	
	AN POVEST1 20-POVESTA TO	
and the second se	70 POKES+1 24+POKES+4 39	
	PO POKES+1,27+POKES+4,39	
	110 POKEV+4 $RA(1)$ POKEV+6 $RA(2)$	
	120 K=PEEK (197)	
	130 IFK=60THEN1000	- 11
	140 IFK=10THENDE=DE-4: IFDE<0THENX=254	- 11
	150 IFK=42THENDE=DE+4:IFDE>255THENX=2	
	160 IFK=12ANDL>0THENL=L-1:Y=Y-4	
	170 POKES+1,10:POKES+4,39	
	190 GDT020	
	1000 ML=ML-1: GOSUB2000	
	1010 POKEV+21,63:DS=256:DF=246:DE=X+12	
	1020 IFDE>255THENDE=255	
	1030 FOR1=(Y+35)T0204STEP2	
	1040 POKEV+2, DE: POKEV+3, I: POKEV+40,3	- {
	1045 K=PEEK(197)	
	1050 IFK=10THENDE=DE-4: IFDE<0THENDE=254	
	1051 IFK=42THENDE=DE+4: IFDE>255THENDE=2	
	1052 IFK=12ANDL>0THENL=L-1:Y=Y-4	
	1053 POKES+1,10:POKES+4,37	
	1054 POKEV+2,DE	
	1060 FORT=1T02:RA(T)=RA(T)+4	
	1070 IFRA(T)>255THENRA(T)*INT(RND(1)*75)+1	
	1080 NEXT	
MILLING CONTRACTOR	1090 IFRND(1)<.4TRENDE=DE-4:IFDE<0THENDE=0	
	1100 [FRND(1) >.6(HENDE=DE+4:1+DE>255[HENDE=255	

1105 IFRND(1) =. 50RRND(1) =. 40RRND(1) =. 6THENDE=DE+6: IFDE>255THENDE=255 1110 POKEV+4, RA(1): POKEV+6, RA(2) 1130 DF=DF-3: POKES+1, DF: POKES+4, 19 1140 IFPEEK (V+30) AND2THEN 3000 1150 NEXT 1160 FORT=0T050:P0KES+1,T:P0KES+4,135:NEXT 1170 IFML=0THEN4500 1180 GOT0140 2000 PRINT"LANDINGS: "SC" " 2010 FRINT"MR.B'S: "ML" " 2020 RETURN 3000 IFI<194THEN1150 3010 POKEV+2, DE: POKEV+3, 197: 5020 POKEV+45,3:POKE2041,198 3030 FOR1=0T050:P0KES+1,I:P0KES+4,135:NEXT 3040 IFML=0THEN4500 3050 SC=SC+1:GDSU02000 3060 POKEV+3,197:FORI=DET00STEP-4 3070 POKEV+2, 1: FORL=1T010 3080 NEXTE.1 3090 POKE2041,193:0010140 4500 FOR1=1T05:FORT=0T015:POKE53280.T 4510 NEXTT,I 4520 PRINT" --- MR & COULDN'T LAND---" 4530 FORI=1T02000:NEXT:RUN 5000 8=54272: FORI=STOS+24: POKEI, 0: NEXT: PRINT"" 5010 POKES+5,100:POKES+6,100:POKES+24,31 5020 POKES+12,100:POKES+13,100:POKES+19,100:POKES+20,100 5030 AS=0:LE=60:LI=3:X=160:Y=70 5040 PDKEV+29,1:ML=10:MD=0 5050 POKE2040,192: POKE2041,193 5060 PDKE2042,194:POKE2043,194 5070 POKE2044,1941POKE2045,194 5080 PDKE2044,198:005U85500 5090 FOR1=01062:READA:POKE12288+1,A:NEXT 5100 FORI=0T042: READA: POKE12352+1, A: NEXT 5110 FORI=0T062:READA:POKE12416+1,A:NEXT 5120 FORI=0T062:READA:POKE12672+1.A:NEXT 5130 POKEV+39,12:POKEV+40,3:PRINT"" 5148 POKEV+41,4:POKEV+42,14 5150 POKEV+43,7:POKEV+44,5 5160 POKEV+45.3 5170 POKE53280,0:POKE53281,0 5180 FORT=1964T02023; POKET_173; POKET+54272_6; NEXT 5190 RA(1)=57:RA(2)=114:RA(3)=171 5200 POKEV+5,197: POKEV+7,197 5210 POKEV+9,197 5220 POKEV+21,61: POKEV, X: POKEV+1,Y 5240 PRINT" 5260 NEXT 5270 RETURN 5500 POKE53280,0:POKE53281,0:PRINT""; 5510 PRINT"-----MR BENNEY ARRIVES-----" 5520 PRINT"CHAPTER ONE VOLUME ONE" 5530 PRINT" (C) SIMON EYRE 1985 * 5540 RETURN 6000 DATA0,127,0,1,255,192,3,255,224,3,227,224 6010 DATA7,217,240,7,223,240,7,217,240,3,231,224 6020 DATA3,255,224,3,255,224,2,255,160,1,127,64 6030 DATA1,62,64,0,156,128,0,156,128,0,73,0,0,73,0 6040 DATA0,62,0,0,62,0,0,62,0,0,28,0 6050 DATA0,60,0,0,126,0,0,195,129,3,211,192,7,207,192,15,211,224,31,195,240 6060 DATA63,255,248,27,109,178,41,4,144,36,137,16,18,122,32,9,252,64,8 6070 DATA248,128,4,33,0,2,34,0,1,252,0,0,32,0,8,32,0,0,80,0,8,136,0 6075 REM++++36 ZEROS+++++ 6085 DATA0.0.0.0.0.0.0.0.0.0.0.0.0.0 6090 DATA15,254,0,16,65,0,16,66,128,32,66,112,239,189,254,239,189,255,240 6100 DATA65,255,197,255,187,56,0,56 6110 DATA0,240,0,1,216,0,1,232,0,1,248,0,3,252,0,1,8,0,1,152,0,1,8,0,1,104,64 6120 DATA0,144,128,0,97,0,1,158,0,2,144,0,4,144,0,8,144,0,0,144,0,0,144,0,0 6130 DATA240,0,1,152,0,1,152,0,3,156,0

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BBC/ELECTRON GAM

This classic puzzle for the BBC and Electron is a Victorian treat. A new variation from Trevor Truran brings it up to date

to savour the way time was passed before the talking wallpaper entered our lives, the program offers you a new variation — where the counters hop like a knight in chess. (Write in if you can beat 40 moves....)

The listing gives the full details of the moves allowed in

actually needed!), set the coordinates of the empty square (EMPX and EMPY) and draw the board

М

PROCinit uses PROCbox to fill in the cells of the board with colour blocks and all is ready for the main loop — which runs from 220 all the way down to 250. The loop invites a MOVE, checks for the end point being reached and keeps throwing you back to do it again until you have the thing solved. Note that horrible things will happen should you still be in the loop after 300 moves and no solution found — to be rather rude but honest, if you are still at it after 300 moves you deserve to crash! When the solution has been found the screen will print up the moves you have made and the count and invite another go; choose 'Y' for either the same puzzle or the alternative. If you wish to get out for a breather, any other key will end the program, after switching your ESCAPE key back on. The donkey work in the program is carried out by PROCmove (590 to 730). Moves are entered by choosing, first the COLumn letter (A to E) and then the ROW number (1 to 5). INPUT has been chosen here rather



This peg solitaire puzzle, popular in Victorian England and published in America by Sam Lloyd, the disputed King of Puzzledom, is simple enough to solve but difficult to solve in the fewest number of moves.

All that you have to do is shift the red blocks to the lower part of the picture while you move the yellow blocks to the top part.

The difficulty is, there is only one empty square to play with. In the traditional version the pieces move by sliding next door into the empty square or by hopping over one counter into the empty square, as in ordinary solitaire.

Henry Dudency, the other puzzler in the Kingship dispute, solved it in a brilliant 46 moves - there's a challenge for you! As well as giving you the chance 1

each version as well as how to enter them.

If, like me, you hate typing in rules and regulations for a program you will only use yourself and can learn quickly then it is quite in order to deal PROCinst a nasty blow and end it after line 950 (make line 960) ENDPROC, of course).

How H works

Can't really be much simpler! After a few immodest REMs which remind you that some mug has bruised his finger ends in the cause of computing, line 140 switches off the ESCAPE key for the duration — it's next door to T which will be frequently aimed at and maybe mis-hit.

Lines 160 to 210 set up the text and graphic windows, reserve a huge chunk of space for the solution string (don't be misled by that 300 — only a fraction of those moves are than GET as with a puzzle quiet contemplation is often needed and if you regret your choice of letter then you can delete it in the usual way before pressing RETURN. It is slower, but with one of the world's classic puzzles, who's in a hurry?

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In order to keep things simple no routine has been incorporated which would let you undo the last move and have it back. You could easily add your own if you wish. If you realise the column entry is wrong after pressing RETURN then enter a ROW number for an impossible move and you won't be any worse off. Once a legal move is entered, though, it's in and added to the list.

Lines 630 to 670 check that a legal move is made according to the choice of puzzle selected by option.

Routines and Variables

- PROCinst gives instructions and selects choice of 2 puzzles
- PROCboard draws the grid of squares with simple MOVE and DRAW
- PROCINIT fills the squares with blocks by calling
- PROCbox which colours in a square. PROCinit also labels the horizontal and vertical axes with letters and numbers.
- PROCmove asks for column and row of piece to be moved, checks that it is legal according to the puzzle

many are the right colour in each half

IGT

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PROCfalsemove give a visual and audible comment on your attempt to break the rules and asks you to move again

As there is no need for memory saving or speed in this puzzle program % variables are not needed in general and haven't been used, which makes the typing in that much easier.

option chooses the puzzle original or modern variation win is set at 0 and 1 when the puzzle is solved. EMPX, EMPY the co-ordinates of the empty box sol⁴ the solution string array count counts the moves made X. Y are used for co-ordinates when drawing and in FOR NEXT loops col the colour for filling squares A.B local variables in PROC box: co-ordinates X⁴/₆ the letters for the axis labelling col% the value of the column mout row the value of the row input check used to count how many squares are correctly filled with the colour needed for the solution situation x used in loops in PROCcheck sol as a co-ordinate Refinements such as a record of the best solution so far and option to print out the moves

it in ";count;" moves." 288FOR X = 1 TO count : PRINT sol\$(X):" ": I NEXT 290PRINT : INPUT "Another try (Y/N)", ans# 300IF ans* = "Y" THEN RUN 318+FX229 32BEND 330DEF PROChoard 348VDU 5 350FOR X = 100 TO 550 STEP 150 360MOVE 100,300+X : DRAW 550,300+X 370HOVE X,400 : DRAW X,850 388HOVE 488,X : DRAM 858,X 390HOVE 300+X,100 : DRAW 300+X,550 and the second second 429DEF PROCbox (A, B, col) 4306COL 0,col 440HOVE A+16,8+16 : MOVE A+134,8+16 : PLOT 85,A+134,8+134 : MOVE A+16,8+134 : PLOT 85,A+ 16,8+16 -460DEF PROCinit 470FOR X = 100 TO 450 STEP 150 488PR0Cbox(108,308+X,1) : PR0Cbox(258,308+X 1) PROCEER (400, 300+X, 1) 498PR0Cbox (498, X, 2) + PR0Cbox (558, X, 2) + PR OChex (700, X, 2) The second se 510PROChost (400,400,0) 520X# = "ABCDE" : GCOL 0,3 530FOR X = 1 TO 5 540HOVE 150+X,900 : PRINT MID#(X#,X,1) 550HOVE 900, X+150+44 + PRINT X 1 E 570VDU 4 : ENDPROC 590DEF PROCesve 590LOCAL X.Y 600REPEAT : CLS : INPUT TAB(0,2) "COL".col# 1 UNTIL ASC(col\$)>64 AND ASC(col\$)<70</p> AIGREPEAT : CLS : INPUT TAB(0.6) "RON" . TON : UNTIL row>0 AND row<6 620X = A95(64- A5C(col#))+158-58 : Y = row# 6301F POINT (X+50, Y+50) = 0 THEN PROCEal semo Ve 1 ENDPROC 6401F option = 49 THEN IF X-EMPX = 0 AND AB S(Y-EMPY)<400 THEN 690 650 IF option = 49 THEN IF EMPY-Y = 0 AND AB S(X-EMPX)<408 THEN 698

Δ

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chosen, empties the box the
                         made on paper can be easily
                                                      6601F option = 50 THEN IF A0S(X-EMPX) = 300
  counter is moving from and
                         added if you wish.
                                                     AND ABS (Y-EMPY) = 150 THEN 698
  fills the previously empty
                          Electron owners change line
                                                      6701F option = 50 THEN IF ABS(X-EMPX) = 150
                         150 to MODE6 PROCinst and
  box. It also adds the move to
                                                     AND ABS (Y-EMPY) = 308 THEN 698
  the solution string.
                         all should be well — the
                                                      680PROCfalsemove ( ENDPROC
                         instructions will appear in plain
PROCchecksol rushes round
                                                      690PROCLox (EMPX, EMPY, PDINT (X+50, Y+50)) ; P
  the squares counting how
                         white rather than fancy colours.
                                                    ROCbox (X.Y.8)
                                                      700EMPX = X + EMPY = Y
                                                      710count = count+1
   100REM ******************************
                                                      729 \text{sol} \text{(count)} = \text{col} \text{+} \text{STR} \text{(cow)}
   730ENDPROC
  740DEF PROCEAL Secove
  750CLS 1 PRINT TAB(0,5) "NO SUCHMOVE" 1 VOU
  140*FX229.1
                                                     7.7.7 : FOR X = 1 TO 2000 : NEXT : CLS
  150MODE 7 : PROCINET
                                                      760PROCeove | ENDPROC
  168MODE 5
                                                      776DEF PROCchecksol
  170VDU 24,8;0;1000;1000;
                                                      780check = 0
  180VDU 28,16,26,19,0
                                                      7901F POINT (450,450) <>0 THEN ENDPROC
  1900\% = 20001 \pm DIM \pm ol \# (300) \pm win = 0 \pm E
                                                      888FOR x = 458 TO 758 STEP 158
MPX = 400 : EMPY = 400 : count = 0
                                                      SIGIF POINT(150,x) = 2 THEN check = check+1
  200PROCboard
                                                      828IF POINT(388,x) = 2 THEN check = check+1
  210PROCinit
                                                     B30IF POINT(x, 150) = 1 THEN check = check+1
  220REPEAT
                                                      848IF POINT(x,308) = 1 THEN check = check+1
  230PRDCmove
                                                      850NEXT
  240PROCchecksol
                                                     660FOR x = 600 TO 750 STEP 150
  258UNTIL win = 1
                                                     879IF POINT(458.x) = 2 THEN check = check+1
  260MODE 7
                                                     880 IF POINT(x, 450) = 1 THEN check * check+1
  270PRINT TAB(5,10) CHR$1311"You have solved
```

G

900IF check = 16 THEN win = 1 910ENDPROC **920DEF PROCinst** 930CLB | PRINT TAB(10,5) CHR\$131; CHR\$141;" VICTORIAN PEG" : PRINT TAB(10,6) CHR#131; CHR \$141: "VICTORIAN PEG" 940PRINT : PRINT "Please choose:-" : PRINT : PRINT "1...ALL CHANGE, the original puzzle" : PRINT : PRINT "2...HOPPING MAD, the new va riation." : PRINT : PRINT "Press 1 or 2." 950REPEAT : option = GET : UNTIL option>48 AND option<51 960PRINT TAB(0,20) "Do you want the rules (p ress V or N) 1 ans = GET * 970IF ans#<>"Y" THEN ENDPROC 990CLS : IF option = 49 PRINT TAB(18,5) CHR \$131: CHR\$141: "ALL CHANGE" | PRINT TAB(10,6) CHR#131: CHR#141: "ALL CHANGE" 9991F option = 58 PRINT TAB(18,5) CHR\$131; CHR\$141; "HOPPING MAD" | PRINT TAB(18,6) 311 CHR#141: "HOPPING MAD" 1000PRINT TAB(0.8) "The O"; CHR#129; "RED"; CH R#135; "counters must change places with the B": CHR#131;"YELLOW": CHR#135;"counters." 1010IF option = 49 PRINT "A counter can move Horizontally or"; SPC (6);"Vertically." ; PR INT "It can move one square into the empty": SPC (3):"square or" : PRINT "it can jump over one counter into the"; SPC (3):"empty square . 16 1028IF option = 50 PRINT "A counter can move like a"; CHR#131; "KNIGHT"; CHR#135; "in"; SPC (5);"Chess into the one empty square on the" # SPC (2);"board." # PRINT : PRINT "(That's 2)

-2.1

- 11

squares horizontally then one vertically or vv')"

1030PRINT TAB(11,23)"<SPACEBAR>" : A\$ = GET\$: REPEAT : UNTIL A\$ = CHR\$32

М

1040CLS : PRINT TAB(0,4)"To make a mover" i PRINT TAB(0,8)"Enter the letter for the COLum n them : PRINT "piece is in and press RETURN"

1050PRINT TAB(0,12)"Enter the number for the ROW the" : PRINT "piece is in and press RETU RN."

1060PRINT TAB(0,16)"If you press the wrong k ey, DELete it" : PRINT "and choose again beto re pressing RETURN"

1070PRINT TAB(11,23) "<SPACEBAR>" : A# = GET# : REPEAT : UNTIL A# = CHR#32 : ENDPROC



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Peering through the coarse bracken we new the only bridge across the river. Alas, how do we deal with that encampment of fearsome creatures squatting & snarling their curses to unknown ears! A fight breaks out, giving our warnors an opportunity to charge forward! Too late, the creatures rally themselves for the ensuing auesome fight, but being overwhelmed they flee in confusion - the bridge is ours! Time for something to eat

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Brainteasers for the Amstrad

Full of new ideas with just a smattering of old chestnuts in disguise, this book will entail many hours at the keyboard — indeed more than need be as the listings have not been renumbered, so be prepared to type most of the line numbers manually.

Newcomers to computing will be disappointed with most of the screen displays as a result of their typing efforts. This is by no means peculiar to this particular book. In fact, it's the one common failing with most books of listings

Don't expect any of the quality found within the pages of this magazine. Editors are very selective now, and listings in magazines are the result of many weeks' loving creation painstakingly produced in the wee small hours. In fact, it's a labour of love by authors whose sole focal point is the one program that comprises their current project.

Back to the book. Several of the powerful Locomotive BASIC commands have been completely ignored. Most noticeable by its absence is SPACES(n) where n is the number of spaces to be printed. Instead you are left with the old



C16

T.

Commodore 16 Exposed

In my experience, one of Commodore's strong points is the provision of manuals which are next to useless. Whilst it's better than those for the 64 and VIC, the C16's manual is still pretty lousy. The resident BASIC is described to a fair extent, but little information on the memory map and other useful aspects is given. This silly attitude helps the growth of Bratish industry by prompting publishers to release books which provide the missing information. This is one such book.

It covers the usual areas of BASIC, graphics, sound, disc and cassette drives, machine code and details of the memory map. The nice feature, however, is the large number of utility routines which are provided. Machine code routines are provided, for example, to enable you to merge programs, restore NEWed programs, list variables and perform cross references.

One area, ignored by the Commodore manual, which receives attention is the creation of user defined characters. This



The Amstrad Programmer's Book

Author Bryan Skinner has really done Amstrad owners proud with this super book. At £6.95 it also has to be the book bargain of the year.

included are all the main aspects of programming this computer in BASIC, along with a gentle but firm introduction to machine code programming.

Twenty-eight chapters, each covering several inter-related commands are amply supported with demonstration listings and an abundance of descriptive diagrams culminating in a clarity of explanation that is sadly missing from the User Handbook.

There is nothing more disconcerting to newcomers than the appearance of Boolean operators within a listing before they have a real grasp of the subject. So the concise teach-in of Boolean logic in chapter six will be a blessing to novices, who will be able to add considerable speed and sophistication to their own programs.

A superb chapter nine is devoted to advanced text and graphic routines that will doubtless enlighten even ex-



SOFTWARE

Galley

Fortnight Ending June 11, 1985

Up and coming

What a static chart this fortnight! No new entries in the top 20 at all.

It is probably due to the summer doldrums, very little new software released and everyone working on new games for the winter

Longest running game in the chart is still Football Manager from Addictive but none of Addictive's other games have even made it to the top 50.

In the lower reaches there was more movement with three new entries. Revs from Acornsoft having climbed to number 24 on the grid, Kik Start from Mastertronic zooming in at number 31 and Herbert's Dummy Run crawling in at 34

After all the pre-release advertising it is surprising to see that Gyron hasn't made more of a mark, it is still stuck at 46 this week

1	8 4		TURE	PUBLISHER	2	4	\$ 1	NO.	E	16	34	N.
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4		2	Spy Hunter	US Gold		ŀ						
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Soft Ald Values States in the local division of the local di US Gold Pitstop CBS Theatre Europe 4 PSS 5 Impossible Mission CBS 6 International Baskatball Commodore 7 Kik Start Masteri/pric 8 Chuldron Support Statistics 9 and the second second Ehte 10 magine

Compiled by Galup for the industry's weekly trade magazine, Computer and Seltware Retailing. For details contact John Semanti, Computer and Seltware Retailing, No. 1 Galdes Square, London W1R 3A8. 01-437-0628

Sord story ...

Please could you at HCW. or anyone else who reads this letter, tell me where I can get some Sord M5 software for my computer. I have absolutely no idea. where to get some and a think it would help if you give the Sord a mention in your magazine.

Rhett Hayward, Milton Keynes

Enter the Enterprise

I read issue No 114 of HCW with interest. What with the cover story about the new Enterprise and the inclusion of an Enterprise program, perhaps there may actually be some response from the supposed 10,000 owners out there

There has so far been a disappointing response to the letter which was recently printed in HCW from Mark Lissak, concerning the Independent Enterprise Users Group. However, the first issue of the group's magazine, Private Enterprise, is due to be published around the end of June and will contain many useful tips and information, including a screen save/load facility in machine code.

All those who want to hear about the group or wish to contribute should contact Mark Lissak at 40 Manfield Rd, London NW3 2HT enclosing an s.a c.

It is good to see a

Dambusters busted

was very glad to see your Dambusters review --- the US Gold game for the C64. The reason for this is that I bought it the day after it came out -- 17 May, At the time I thought it was great, if good graphics and sound and extreme addictiveness. Then I began to notice slight mishaps. After solidly playing for a few days 1 🗠 succeeded in scoring a hit on both the practice and Flight # Lieutenant options.== On scoring a hit on level. one I was told "it's about time you tried a game" but I had no dam explosion or anything like that. Pairenough, I thought, after all who'd want to play the harder levels when you've seen the end dozens of times on the easy level. •

Imagine my dismay when: scored a hit on the second level — the same screne and well drawa dam picture but (very still and intact. The NESDARE WAS & standard -"Well done, Flight Lieutenant, you did it!" Wow! --Another problem is that. my version had no title: screen. On reading the review, in HCW, I now learn that there is a title screen and a big explosion at the end. Did I have a

...and Sord-er still

I am the proud owner of a Sord M5 home computer. Could anyone tell me where I can get hold of some computer programs for it and how much they would COSL

I would also be interested to know if HCW would let me know when any new programs arrive for review.

E Field, Nuneaton

We are sorry but we cannot enter into personal correspondence with our readers. If we did, we would spend all our time writing letters and there wouldn't be a magazine every week. With regard to Sord M5 software, we would be happy to review some if it came our way, but it is a long time since any was seen in this office

Members wonted

I run a computer club at the YMCA, 64 Forest Road, Waithamstow, London. We started the club some time ago but unfortunately I am unable to get any more members. The club is for people aged 16 and under and anyone else who is interested in computers.

I can give instruction on any computer. At the club we use a C64, Spectrum,



magazine giving some sort of backing to the Enterprise 64 and I hope HCW will continue to do so Obviously this will depend almost entirely on user reponse, so come on all you owners - you've got a great machine, start proving it. It is said that no machine will get off the ground without software and software houses aren't going to back a machine with no user base, so show yourselves. If the Enterprise goes the way of the Dragon, Lynx and many other good home computers, you have only yourself to blame.

Dave Race, Bicester

bugged copy?

Fortunately i managed to take it back to the shop but only managed to get a . replacement — Pole 4 Position, which I can'r really say I'm all that wild about, as I really wanted a Pitstop II for my collection. So now I'm left with a : game if dan't really want buil a came I dare and bliv in case I get another bugged copy. I'd advise other 64 at owners to check their copy of Dambusters for these -bugs and return it is there's anything wrong with it.e In the meantime, any Present ions?

Andy Clarks, Beddesley Enser 1

Amstrad and sometimes a 88C.

If I don't get more members very soon. I will have no choice but to close the club and Walthamstow will lost its only computer club. I am writing this letter as a last hope so that you will promote the club in your letters page.

Anyone who is interested can write or call in at the club on any Sunday morning and ask to see me for further details.

I would also be interested to hear of somewhere where I can buy cheap software for the club.

S A Britton, Waithamstow

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MND

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Accurate 900 screen serolling map of the Royal St. George's: Golf Course, venue for the Open Championship 1985

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This week we're offering a day out with Paul McCartney as the top prize in our competition, so read on to find out how you can get to meet Liverpool's most famous son

A day in London and a chance to meet Paul McCartney is the first prize in this week's competition

Runners-up prizes are six albums, six videos and 50 E10 vouchers to be used on any software in the APS range.

Give my Regards to Broad Street is not simply the title of McCartney's new film — it is also an excellent computer game from Argus Press Software. The game is based on the same storyline as the film and has you chasing all over London trying to find your friends and the missing sections of a master tape.

The game has you learning the London streets in a way that Monopoly never did and you get to know a little about the underground too. In order to enter this competition you must have a copy of the game.

We have negotiated a special discount with Argus Press Software which will allow all our Spectrum and C64 readers to claim £1 off the retail price if you apply using the coupon on this page.

Once you have your cont you

How to enter

After you have purchased a copy of the game make sure you spend as much time as you can playing it. Then study the questions below and decide on your answers.

Write your answers on the entry coupon and make sure they are clear and easy to read

Complete the rest of the coupon which tests your game playing skills.

Finally fill in your name, address and post code as these will be needed if you are one of our prize winners.

Your completed entry form should be scaled in an envelope and posted to us at Broad Street Competition, Home Computing Weekly, No.J Golden Square, London WIR 3AB to arrive by first post on Friday 9th August.

Questions

- 1 How many people are there in the game?
- 2 What make of car does Pau drive in the game?
- 3 Where do you go after you've collected the missing notes?
- 4 What tube station doe George Martin come out o after leaving Heathrow?
- 5 in the game, which tube station shows you the Tower o London?
- 6 Which tube station do you go to in order to visit the Old Justice pub?

The rules

Entries will not be accepted from employeet of Argus Specialist Publics tions, Argus Specialist Press, the agents, printers or distributors.

The editor's decision is final and n correspondence can be entered into



Fill this in as soon as you think that you know all the

8	will need to play the game extensively as the questions are all about your adventures.
	ROTAL ALDERT HALL
ELSI-	A LAND AND A LAND AND AND AND AND AND AND AND AND AND
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Name		
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I think that t	the answers are:	
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v		-
Validation qu What is your	high score?	
Validation q What is your What time of	high score?	

Send your entries to: Broad Street Competition, Home Computing Week 5, No. 1 Uniden Square - contour WTR (ARE Costant date: first post, Finday 9 August, 1985

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UTHWARKST,

Broad Street Discount Voucher I would like to claim my £1 off the price of Give my Regards to Broad Street for the Spectrum/C64 (delete as required). I enclose a cheque/postal order for the sum of £6.99 (made payable to Argus Press Software). Name _____ Address code Send to: Broad Street Special Offer Argus Press Software Liberty House 222 Regent St London WIR 6AH INCODALOS GII State Base Toltenham Court Roa fore Direus egan OADSTREE ST. PAULS LUDGATE" ET ST. CORNHILL UEEN VICTORIAST. O Manument for Bank FENCHURCHST. EASTCHEAP 80085 FORDSI

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Here is a short routine demonstrating the Enterprise's powerful graphics at work. The shape is created by continually drawing ellipses of increasing size and the colours produced are pleasant pastel shades. Note how the commands within the FOR/NEXT loop have been staggered.

А

Clive Gifford, Ashford

100 GAMPHECE HERED 204 110 SET LINE HODE 1 120 FOR 7=1 10 200 130 WET INC T PLOT 646, 250 144 PLOT BLUPPE T, T 1.50 100 BOLND PITCH (T/a) +8, DURATION S 170 HELT 100 (00)

Ξ

10PRINT"Choose a number from 111 to 999" 20INPUT X 30LET X\$=\$TR\$(X) 40LET X\$=X\$+X\$ SOLET X=VAL(X\$) 60PRINTX 70LET X=X/7 SOPRINTX 90LET X=X/11 100PRINTX 110LET X=X/13 130PRINTS. 130 PRINT"WOW! -How did that happen?" 140 PRINT"Try It a few times. Can you explain why it works ...?" 150END

Name

John |

Simon

Here's a

we trust,

not all m

your mac what hap

You m

Readers' hi-score table

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E

Solution

	Game		Machine	Score			
Green Gray	Munch-Man Pole Position Killer Gorilla BMX on the	Moon	TI-99/4A BBC BBC BBC	217,170 102,300 36,500 2,650			
uzzle little pro will run	prog ogram which, on most, if	What compu The A Ziour	is a squirrel' iter? corn Electron Rahman, Nott	s favourite Ingham			
ieros. ay like to pop it into hine's memory and see pens.		Which would you buy first: a television or a new computer? A television, because channel always come before ports					
**		How sell ou He sol	did the comp t of character d with no strin Barnard, Bash	uter dealer ? gs attached			



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